December 2001
Volume 69 No 12

Amateur Radio

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Our cover this month

Bill Rice VK3ABP was granted Life Membership of the WIA in recognition of his service to Amateur Radio in general and Amateur Radio Magazine in particular. Brenda Edmonds VK3KT Federal Director WIA made the presentations at the Amateur Radio Magazine Publications Committee Meeting on 13th November 2001. The presentation consisted of a Life Membership Certificate, a Life Membership Pin and a cheque.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the Federal Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA Federal Office (until stocks are exhausted), at $4.00 each (including postage within Australia) to members.

Photostat copies

When back issues are no longer available, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest
National Radio Society
Founded 1910

Representing
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Member of the
International Amateur Radio Union

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Editor's Comment

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"What is Amateur Radio? "

This topic came up recently. I suppose those of you who read Editorials have an idea of where I stand, but I think I might try and put a few thoughts to you.

1. Amateur Radio must have something to do with electromagnetic waves and the transfer of information.
2. It is not a professional activity though it aspires to high professional standards.
3. The development of electronics last century has seen considerable additions to simple systems to make them more efficient both in the transmitter and the receiver.
4. We now have access to a wide range of activities covering specific regions of the EM spectrum from tens of kilohertz to light and there are many different ways of processing the information we seek to share with others. This brings continual new challenges to how we operate and what we operate.
5. We all try and operate to a code of practice. A good example of this is that used by the ARRL and published in their Amateur Radio Handbook.
6. There is also a motivation that gets you up in the dark to work DX, to camp out on Field Days, to stay awake in a contest for 24 hours, to spend weeks getting a circuit to work just right, to climb mountains in the rain and snow to fix a repeater plus many other things

Then we also need to have a link into the Government regulatory body to ensure we still have access to spectrum and that we can work with other users of this finite resource. The WIA is the Australian National Radio Society recognised by the Commonwealth Government. So it is very important that it continues to be effective. We need to be always mindful that all the Office Bearers of the WIA are VOLUNTEERS. WIA Federal has only two paid part time staff, in its Melbourne Office.

The viability of any organisation is bound up with how it meets its members needs and how the members are able to come together and express these needs. One of the roles Amateur Radio Magazine plays is to provide a place where members can air their views.

Well we are now into the Christmas Season. This means holidays, it means parties, it means religious celebrations and it means opportunities to try and spread good will in our present troubled world. One of the great things about Amateur Radio is its ability to bring people of all races into contact in a non threatening atmosphere where they can share a common bond and hopefully erase some of the artificial barriers nations build up between themselves.

I pray that you may all have a Christmas season that you enjoy and that you may be able to spread a little 'Good Will' and some 'Good Cheer'. Some of you may even get some new equipment from Santa !!!!

ar

New WIA Members

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of OCTOBER 2001

L50368 MR I E WESTGARTH
VK3ALC MR D BRENNAN
VK3JDE MR J DUNBAR
VK3URC MR R CRAWFORD
VK3VYD MR R L MARCHANT
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VK5NIU MR T D MOORE
VK6YLW MR L W KOAY
VK7CQ MR D WESCOMBE-DOWN

WIA Comment

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Marconi Day

By the time this copy of AR reaches you we should be in the middle of the Marconi Day celebrations. I know that a number of Division and clubs have made special arrangements including obtaining special callsigns for the event. I would like to take this opportunity of wishing all amateurs well at this time and trust that you all experience great conditions for communications. Also well done to all those amateurs who have been able to use the event to promote the hobby through both the local and national media.

AR Matters

Many of you will have heard by now that Dick Smith Electronics have been forced to cut back on their advertising throughout Australia. This will have an immediate impact upon the budget allocated to producing AR. Earlier this year I reported on the New Zealand experience with the production of *Break In*. Due to financial restrictions NZART was forced to reduce *Break In* to 6 issues per year. In the current financial situation, factors such as loss of advertising will force the WIA into making some difficult decisions about the way we publish AR in the future.

The costs of AR are not in the development of the content but rather in the costs of production and distribution. I have heard many comments in recent months about the recent improvements to the quality and content of AR. Well done to all of those members involved in this effort. However many of us still experience delays in receiving AR. These delays are not due to the date of publication but rather problems with the distribution (and specifically a conscious decision by the executive not to pay the high costs of speedier delivery).

We need to act to address this matter of reducing advertising budget and increasing costs. At the moment the executive are looking at a number of alternatives:

- Do nothing and accept that AR will cost more to produce and simply raise membership costs.
- Find alternate sources of funding or advertising revenue to make up the current shortfall
- Reduce AR to 6 issues per year
- Consider the option of piggy backing AR onto another magazine. This would see AR as a self contained insert in another magazine. The WIA would retain full editorial rights and the insert would to all intents and purposes be the same as the current AR. Any such proposal would require that the new AR was mailed directly to members as is currently the case. The major difference with this approach rests in that the AR insert would then also be available to the wider public when that magazine reached the newsstands.

I have already asked the councils for their opinions on these issues. This is your chance to make your opinions known. If you have a point of view, please let me and your Divisional Councillor know what your thoughts are.

The 2002 Callbook

Many of you will have seen the advertisement in last month's AR for the Callbook. This year we have made a number of changes. The first is to restrict the Callbook to a callsign listing only. We still hold a large number of copies of the 2001 Callbook with the reference material included within it. Therefore we decided that we would offer members the option to buy both this year's callsign book along with last year's Callbook at a reduced price. Members wishing to buy only the 2002 Callbook will be able to do so at a reduced price reflecting its lack of reference material. In future this separation of callsigns from reference material will allow us to consider the option of publishing the reference material in a separate WIA reference or handbook.

The second difference is to publish the Callbook on CD ROM. This is inevitably a contentious issue. I know a number of people will have concerns about illegal copying and distribution. This is an issue faced by many publishers of electronic media. My research indicates we would be failing the membership if we do not embrace modern technology to deliver information and services. The raw callsign listing is already available from the ACA both on the web and via CD ROM and thus already able to be copied. Given this, I believe the WIA should pitch in and make its version available.

The executive and I will be closely monitoring sales of the new style Callbook and CD ROM to assess your reactions. If you are interested in seeing the reference material published separately please let me know. It would be a real achievement for WIA to be able to publish an annual reference book along the lines of the ARRL and RSGB handbooks.

2002 Convention

The executive has already begun planning for the 2002 WIA convention. As I noted in my NZART trip report there are number of things that we can do to improve the current convention format. These include:

- Dealing with as many matters as possible by postal vote prior to the convention in order to release time to concentrate on strategic issues
- Setting time aside to consider the future structure of the WIA and how it will need to operate in the next few years.
- Providing some form of on-air reporting of matters under discussion using perhaps HF, RTTY, or IRLP to achieve this
- Organising a dinner event open to any WIA members who wish to attend and have a chance to make their opinions known to the executive and the council.

Please let me know if you have any thoughts or suggestions that can serve to make the next convention a great meeting of amateur radio operators.

Recent Correspondence

One of our members asked me the question "what is at the core of amateur radio?" Many of us will have different responses to this question. If you have a particular view please write to me.

ar

A X1000 probe for high-voltage measurements

Drew Diamond, VK3XU,
45 Gatters Rd.,
WONGA PARK, 3115.

In electronics, radio and TV work, there are instances where it is necessary to measure a high voltage potential. Most ordinary digital multimeters (DMM or DVM) generally only measure up to perhaps 1000 or 1200 Vdc, and maybe 750 to 1000 Vac. But beyond about 1000 V- what can we do? For popular 10 megohm input impedance instruments (such as a DMM) the most widely accepted method is to use a high-voltage multiplier probe to scale the voltage down to a more appropriate value.

The "HV multiplier probe" is so named because the DMM's range is multiplied, but what actually takes place is a division of voltage by some known factor, usually 1000 : 1. For instance, if it is required to measure say, the 22,000 V (22 kV) potential on a TV receiver's picture tube, when contacted to the tube the HV probe would deliver 22.00 V to the input of a 10 megohm DMM or VTVM. Similarly, the 3 kV plate/anode supply for a high-power transmitting amplifier would measure 3.00 V, and so on. The physical construction of the probe also permits the user to examine the circuit under test without risk of receiving a 'bite' through the probe.

Such probes are available commercially (generally from suppliers to the TV service trade), but for the amateur worker, who might only make occasional (albeit vital) measurements, the cost of a suitable probe would seem high. Here are details of a home-made probe which, if made in accordance with the following, may be used to make quite accurate HV measurements up to 25 kVdc.

Circuit

The goal was to construct a probe using ordinary parts from our customary electronics/electrical suppliers. The highest catalogue value 1 W resistors are 10 megohm, so it was decided to try a string of resistors to obtain the necessary division ratio. A number of these were purchased from Jaycar, their value measured, then 'soaked' by applying 1500 Vac rms (2100 V peak) across each resistor for several hours. No measurable change in resistance value was observed, nor did any voltage break-down or excessive heating occur. Interestingly, although they are specified 5%, all of my samples were well within that tolerance.

A string of nine 10 megohm resistors, and a parallel combination of a 100 k 1% and 1.2 megohm resistor form a voltage divider network, which, when connected to the conventional 10 megohm input of a DMM (or VTVM) divides the input voltage by close to 1000. In practice, measured dc voltages are within 2% of applied voltage.

For AC voltage measurements, the measured voltage will always be a little less than actual applied voltage, by up to about 5%. This error is caused by the necessary shielded connecting cable between the probe and meter, which may have a capacitance of typically 250 pF/metre, whose 12 megohm reactance (at 50 Hz) effectively appears in shunt with the bottom divider resistance.

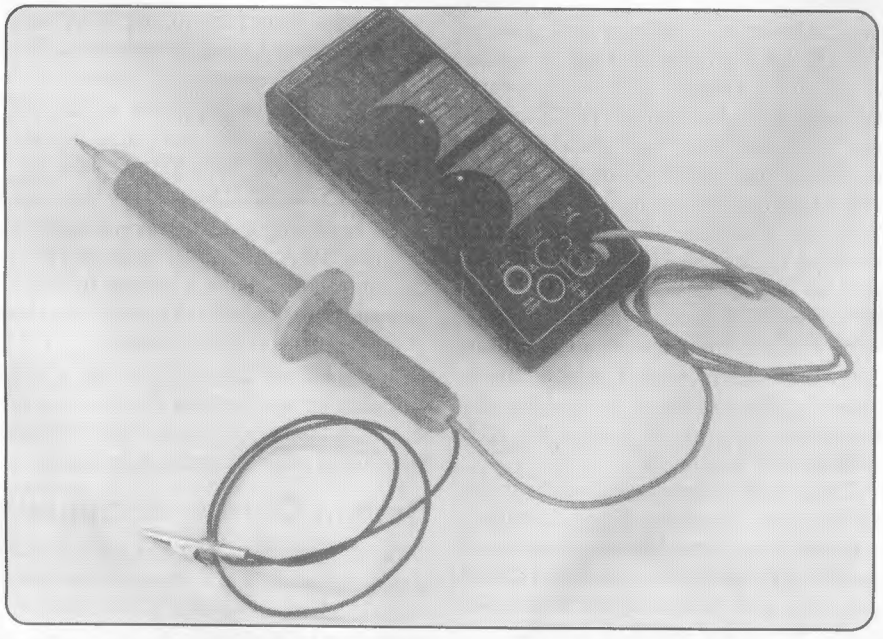

Photo 1. Probe and DMM

Construction

The main body of the probe is made from a 185 mm length of ordinary 20 mm o.d. electrical conduit tube. The nine 10 M resistors, and the shunt resistors are accommodated upon a 175 mm length strip of plain circuit board- phenolic or

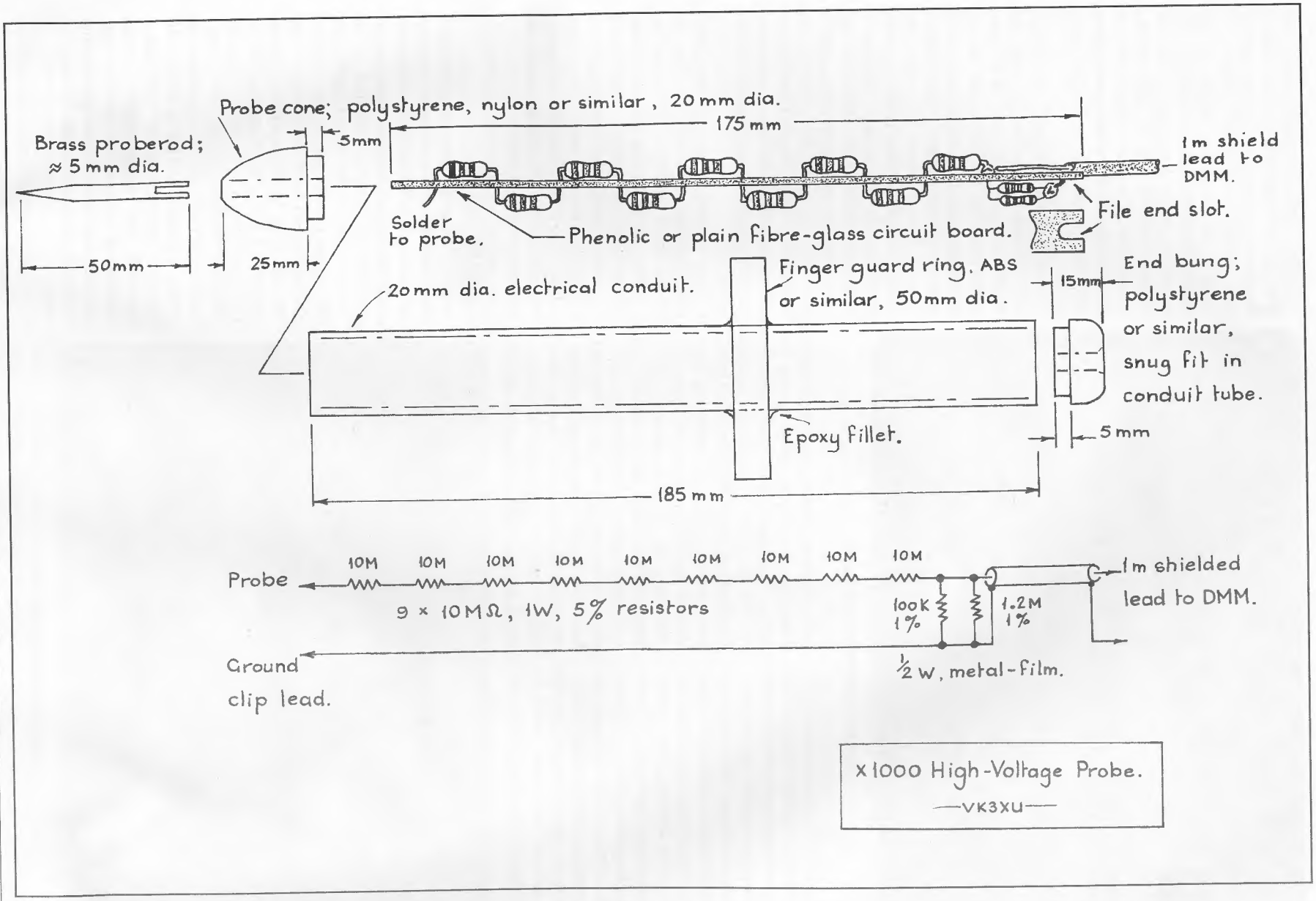
Probe cone; polystyrene, nylon or similar, 20 mm dia.
175 mm
5mm
Brass proberod; ≈ 5 mm dia.
1m shield lead to DMM.
Solder to probe.
Phenolic or plain fibre-glass circuit board.
File end slot.
50mm
25mm
20mm dia. electrical conduit.
Finger guard ring. ABS or similar, 50mm dia.
15mm
End bung; polystyrene or similar, snug fit in conduit tube.
Epoxy Fillet.
5mm
185 mm
Probe
10M 10M 10M 10M 10M 10M 10M 10M 10M
9 × 10MΩ, 1W, 5% resistors
100K 1%
1.2M 1%
1m shielded lead to DMM.
Ground clip lead.
½ W, metal-Film.
x1000 High-Voltage Probe.
—VK3XU—

Figure 1

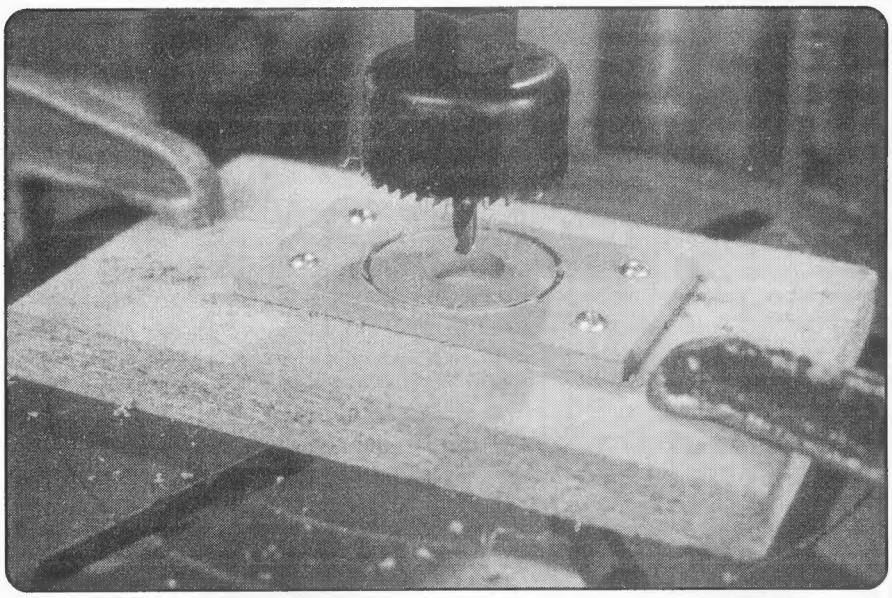

Photo 2. Hole-sawing the guard

plain fibre-glass (copper etched off), made to slide fit into the conduit. The resistor leads should be inserted through #55 (or 1 mm) holes drilled in the board, and their leads soldered together at each join. The resulting assembly will fit best in the tube if the resistors are alternated, as shown in the drawing. File a small notch at the bung end of the circuit board to permit the cable to exit without bending. Remember to allow also for the flexible ground connection clip lead.

The cone or bullet-shaped probe insulator and end bung were made in the lathe from 20 mm dia. polystyrene rod, although nylon or other similar excellent insulation material may be used. They should be turned carefully to size in order to provide a good interference fit inside the conduit tube, thereby making them self-retaining. If no lathe is available, these parts may be fabricated by adapting suitably sized items such as rubber grommets etc.

A finger guard is mandatory, as it reminds the user to hold the probe well back from the tip. That shown was hole-sawn from a rectangle of 12 mm thick ABS (the grey or orange plastic material, much used in electrical work) before which the central 20 mm hole was bored and hand-reamed to exact size. A suggested method of hole-sawing the ring is depicted in Photo 2, where the ABS is attached to an off-cut of chip-board with four screws, which in turn is affixed with G-clamps to the drill table. Clean up rough edges with a bastard file. The guard ring is slid onto the conduit- about 2/3rds the way along, and fixed there with a fillet of epoxy glue.

Plain (or threaded) brass rod, about 5 mm diameter is ideal for the probe tip. The point may be formed in a "poor-man's lathe" by fitting the rod into the chuck of a vice-mounted electric drill, where a file is applied to the rotating brass to form a point. The other end should have a slot filed (with a needle-file) as shown, for a slide fit onto the HV end of the circuit board. Drill a #55 or 1 mm hole through the brass, and a matching hole in the circuit board, then the resistor's lead is looped through and soldered, thus providing an electrical connection and physical anchor for the probe tip.

Upon assembly, the cone insulator is first fitted into the conduit, then the circuit board and tip may be inserted into the tube so that the probe tip enters the hole then "bottoms out" as the board abuts the insulator. The end bung is then carefully pushed home. Fit a dual banana plug (or other suitable plug(s) to suit your DMM's input) to the meter end of the screened cable.

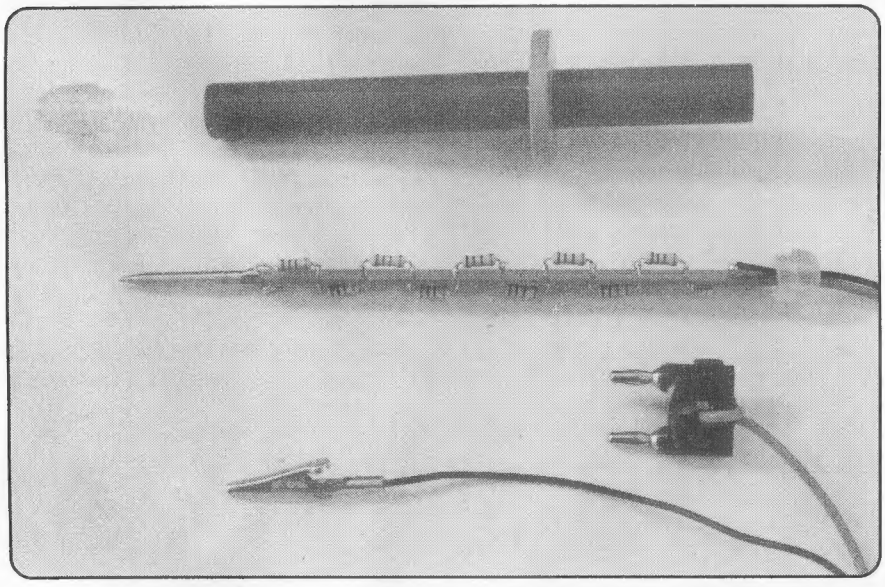

Photo 3. Probe components

Operation

In use, all measurements MUST be taken with reference to earth or chassis ground- which is usually the case with ordinary voltage measurements, so the ground clip lead is attached to the "earthy" side of the circuit under test. The probe is held with fingers behind the guard, and carefully touched upon the test point. If, for example, a voltage of about 3 kV is to be measured, the DMM is set for a range which includes 1/1000th that potential, eg. 20 V. Now a reading of (say) 3.12 V represents an actual voltage of 3.12 kV or 3120 V. AC voltage measurements are done similarly, but keep in mind that the measured voltage (at 50 Hz) will generally be about 5 % below actual due to the capacitance of the connecting cable.

Continued next page

Amateur Licence Renewals

5 year term still available

The five-year renewal option is available. The renewal cost for a 5 year Amateur licence is $224.80.

These two internet links will give you all payment options.

http://www.aca.gov.au/publications/info/amateur.htm#Fees_and_Charges

http://www.aca.gov.au/licence/fees/alfs.pdf (Table 4 Non Assigned Licence Fees - on page 45)

You can either pay by mail to Australian Communications Authority
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Or in person at any ACA office;
http://www.aca.gov.au/contact.htm

Or by BPay by entering the biller code of your renewal notice.

For further information contact:
Jean-Guy Célestin
Australian Communications Authority
NSW Regional Office, Sydney Customer Access Team
Tel: (02) 9245 4028
Fax: (02) 9245 4099

AMSAT chief to visit Melbourne

A world expert on amateur satellites will be the guest speaker at Melbourne's Moorabbin and District Radio Club in February. Robin Haighton VE3FRH will be talking about the Phase 3D/AO40 satellite, which is now successfully operating despite some post-launch difficulties, and the next exciting generation bird known as "Project JJ".

Moorabbin District Radio Club President, Keith McCarthy VK3JNB said he extends a warm invitation to all to attend the club's monthly meeting on Friday 22 February. Keith VK3JNB said the night will be a rare opportunity to hear first hand about the world of amateur satellites from the leader of AMSAT NA. The club committee believes the presentation will be equally of interest to those who now use amateur satellites, and those just thinking that one-day they would like to do so.

Robin VE3FRH said his presentation lasting about 45 minutes is to include the latest developments from AMSAT and questions from the audience will be most welcome. In a recent article in QST magazine he discussed the "Project JJ" satellite which promises to make satellite working even easier.

Robin VE3FRH said: "We would like people in apartments to have access to satellites with relatively compact equipment and not have to swing large antennas around. We're looking at our next satellite to provide that." He said it also might employ digital modulation capabilities that could make the new satellite "probably at least 10 dB better than anything we're currently using."

Like AO-40, the new satellite will have an elliptical orbit to provide hours of access every day. As conceived, the new satellite would at least be useable by radio amateurs with omnidirectional antennas at perigee, plus users with good antennas at UHF as well as L-band and S-band. AMSAT-NA is already negotiating with satellite launch agencies, preliminary design work will begin mid-2002, and Robin VE3FRH believes the project could reach fruition within three years.

Come along and meet Robin VE3FRH at the Moorabbin District Radio Club on Friday, 22 February, 2002, at the combined clubrooms, Turner Road, Highett (Melway 77J9), starting 8pm.

Supplied by WIA Victoria Tel. 9885 9261 40G Victory Boulevard Fax. 9885 9298 Ashburton 3147

A X1000 probe for high-voltage measurements (continued)

Some salient rules for high-voltage work are;

1. Locate and identify all high-voltage points of the equipment under test before making measurements.
2. Work with one hand in your pocket.
3. Ensure that no part of your body touches ground whilst making a measurement.
4. Remember that any point in an item of faulty equipment may be at high potential- use a HV probe when in doubt.
5. Avoid working alone on high-voltage equipment.

To measure the anode voltage of a TV or monitor tube, the probe tip is carefully inserted under the silicone connector cover, then worked inwards until contact is made. You may observe some corona effects (a blue arc, and a hissing sound) as the probe is brought into proximity with the test point.

Parts

The 10 megohm 1 W resistors (P/N RR-2870), 100 k 1% 0.5 W (RR-0620) and 1.2 M 1% 0.25 W (RR-1650) are available from Jaycar Electronics. Ask an electrician mate for an off-cut of ordinary 20 mm conduit for the tube body, and some ABS plastic material for the guard ring (bet he asks you to make him one too- for those microwave oven jobs).

References and Further Reading

1. "Measuring High Voltages"; I. White, (G3SEK) "In Practice"; RadCom Apr. '94.
2. "Extend Your DVM's Measurement Capabilities"; R. Fowler, N6YC, Ham Radio (USA) Oct. '89.
3. Vacuum Tube Voltmeters (2nd ed. 1951); John F. Rider, Rider Publications.

ar

The Outback 813 amplifier

A single 813 on 20 metres

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After successfully converting the *Twin Crystal Filter 40 Metre QRP Transceiver*, designed by Drew Diamond VK3XU, on to the 20 metre band, I decided to build a single-band amplifier comparable to the 100 watt output of the modern transceiver. It was to be compact, and with low drive requirements from the QRP rig for those evenings when the band was not favourable for just four to five watts and a dipole at 30 feet. After much thought, the decision was made to use a single 813 beam power tube wired in the not-so-famous G2DAF configuration.

There have been many 813 amplifier articles written over the years in a variety of radio magazines. This one is not much different except for some outback engineering and humour in building it. Recently there was a very nice article, written by C J Bourke VK4YE, featured in *Amateur Radio* magazine not so long ago. It used two 813s in the G2DAF configuration, with Part 1 in March 1999 issue, and Part 2 in April 1999. I highly recommend you read this fine article.

I have decided not to include the theory, and concentrate on what someone is up against when trying to build a linear amplifier whilst living in outback Australia. You can only pester your mates for so long before they get annoyed at all the requests to source parts and post them to remote locations. It turns out that the local rubbish tip can be an excellent choice for parts if you have access to it, and you don't mind being seen there.

Anyone interested in reading the original G2DAF amplifier article can do so by down loading it at http://www.ifwtech.demon.co,uk/g3sek/g2daf.htm. It is about 720 kb and in the .PDF format.

The usual warning applies here. *This project uses high voltages and high voltage can and could kill you.* If you don't feel that you're competent with this, possibly you should pass on this project or look into building a solid state amplifier.

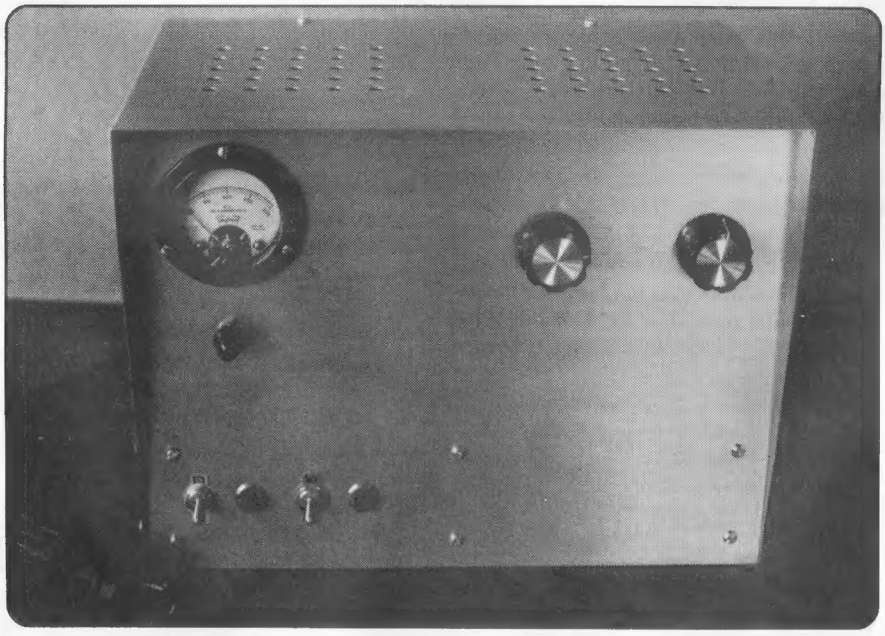

Photo 1 – Front panel of the completed 813 amplifier.

The Transformers

The HV transformer is from a microwave oven found at the tip. It is about 400 VA in size, according to its core cross sectional area, and a few modifications must be done to it before it can be used.

First, the flux shunts must be removed. These are the two small stacks of steel laminations between the primary and secondary windings. A small length of 6.5 mm square key steel and a hammer were used to do this. This leaves plenty of room to wind the extra turns on the primary, as described later.

Secondly, one side of the HV secondary is tied to the actual steel laminations of the transformer. This must be removed so that no windings on the HV secondary are touching the core laminations!

The primary voltage on the transformer is 240 Vac, but the secondary voltage was unknown. Not having any sort of HV probe to test the transformer, it was decided to apply an accurately known low AC voltage of 6.30 V on to the primary, and accurately read the results on the secondary. After this was completed it was found that the transformer had a turns ratio of 1 to 9.72, or for every volt applied to the primary, there would be 9.72 times the primary volt on the secondary. With 240 volts on the primary, there would be 2333 volts on the secondary. After rectifying and filtering, this would rise to about 3300 Vdc. Just a bit too high for the 813!

Looking at the secondary, which was totally encapsulated in varnish, it was

decided to add turns to the primary to try to reduce the turns ratio, hence, reducing the secondary high voltage. Enough turns were added to the primary to bring the secondary voltage down to about 1980 volts AC. Now, after rectifying and filtering, the voltage is a respectable 2800 Vdc.

The filament transformer is of the 50 VA vintage, again found at the local tip. It had a 240 volt primary but the secondary needed to be rewired to accommodate the 10 Vac, five amps, and centre tapped requirements for the filament of the 813.

The control voltage transformer was removed from a discarded portable stereo found at the tip. It had secondary ac voltages of 9 and 18. When rectified and filtered they produced 12.75 Vdc and 25.50 Vdc. Almost exactly what was needed! *(See Technical Editor's Note 2.)*

HV Electrolytic Capacitors

While at the local tip one afternoon, dropping off grass clippings and tree limbs, I spotted four abandoned computers and monitors that were heavily bombarded by bricks and large stones. In the back of each of these monitors were two 180 mf, 400 Vdc electrolytic capacitors. This was a real money saver. I believe they would have been at least $10.00 each if I needed to buy them new.

Just as a side note, I have yet to find a computer monitor or TV set at the local tip without some sort of brick, stone or metal object protruding out the front of the picture tube! What a shame!

The Plate Choke

Having used the only plate choke I had in a previous amplifier project, it was decided to cut about 150 mm off of the end of a standard 22 mm OD wooden garden-rake handle. This was put into the chuck on the drill press and turned down. Crudely made lathe tools, which I will not discuss, were used to turn the first 75 mm +/- down to about 13 mm in diameter. The next 8 mm was left at 22 mm OD; the next 8 mm turned down to 17 mm OD; the next 8 mm was left at 22 mm OD; the next 8 mm turned down to 17 mm OD; and the last 10 mm was left at 22 mm OD. The remaining length of the handle was cut off and discarded.

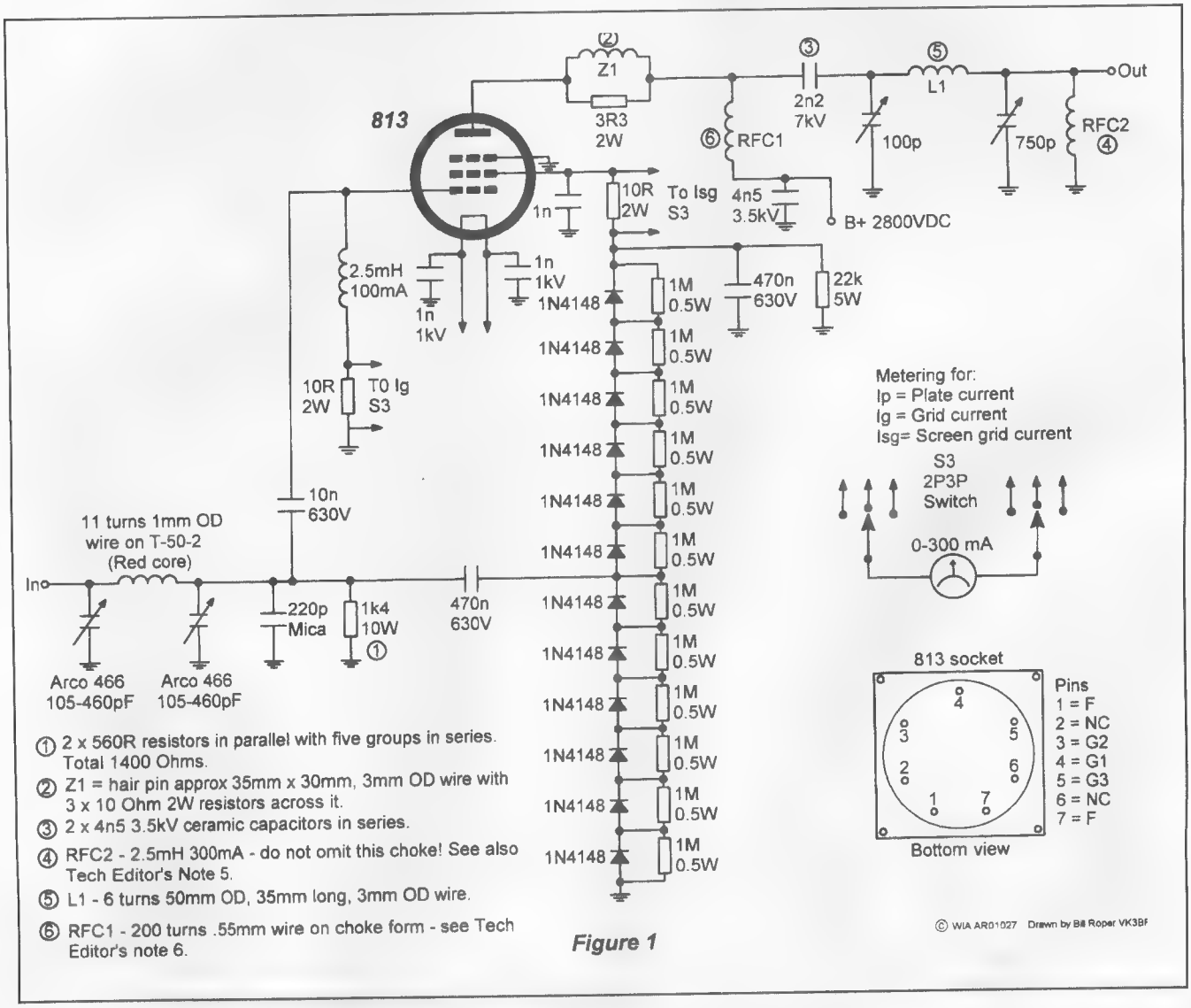

Fig 1 – The Outback 813 Amplifier RF deck circuit diagram.

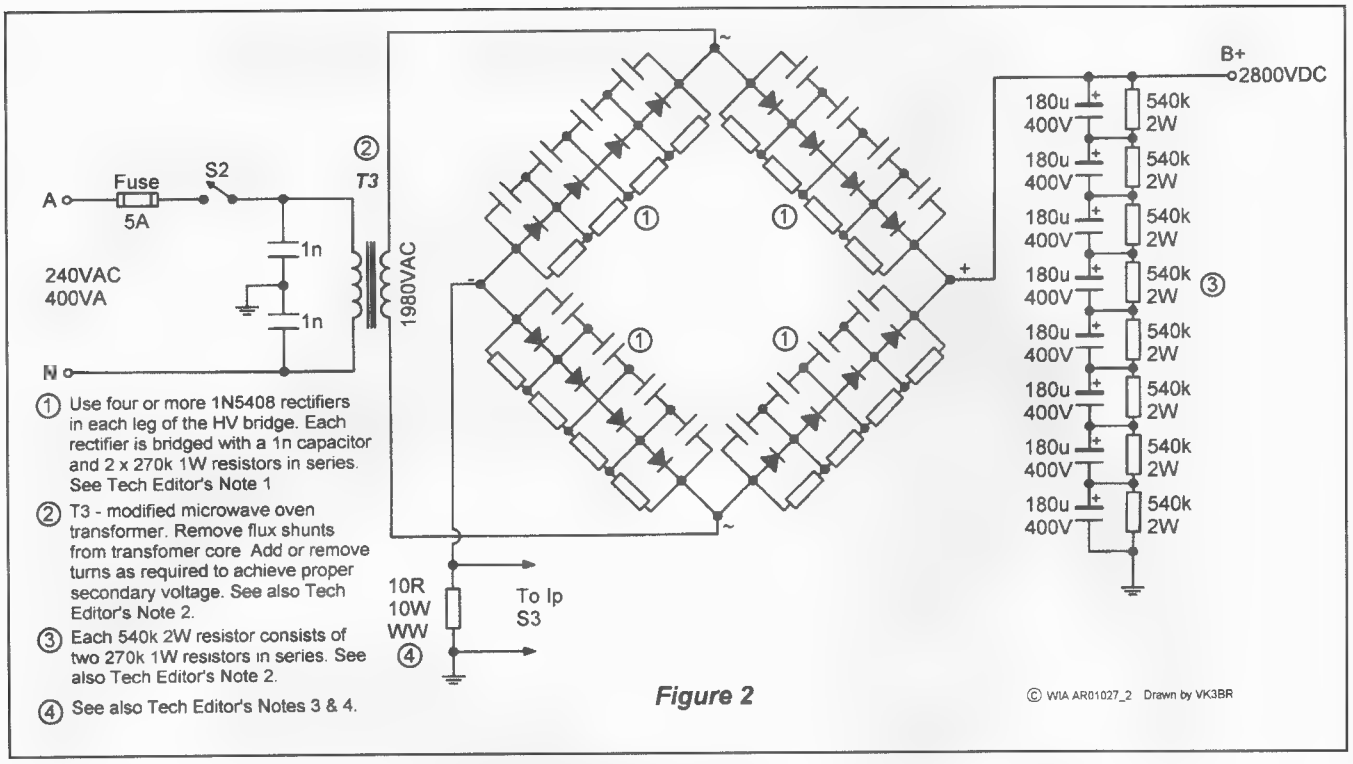
A
Fuse
5A
S2
240VAC
400VA
1n
1n
N
T3
1980VAC
10R
10W
WW
To Ip
S3
B+
2800VDC
180u
400V
540k
2W
① Use four or more 1N5408 rectifiers in each leg of the HV bridge. Each rectifier is bridged with a 1n capacitor and 2 x 270k 1W resistors in series. See Tech Editor's Note 1
② T3 - modified microwave oven transformer. Remove flux shunts from transfomer core Add or remove turns as required to achieve proper secondary voltage. See also Tech Editor's Note 2.
③ Each 540k 2W resistor consists of two 270k 1W resistors in series. See also Tech Editor's Note 2.
④ See also Tech Editor's Notes 3 & 4.
Figure 2
© WIA AR01027_2 Drawn by VK3BR

Fig 2 - The 813 amplifier HV PSU circuit diagram.

The overall length of the choke form is about 120 mm. A 3 mm hole was drilled on centre in each end of the plate choke form to accommodate a sheet metal screw. One screw is used on the bottom for attaching the form to the chassis, and the other to attach the lugs from the plate blocking capacitor and parasitic suppressor to the top of the choke form.

Enamel covered wire from a motor starter contactor coil was used to wind the choke. I'm not sure exactly how many turns are on it, because I can't see that well, but I think it's about 200. A few coats of varnish were brushed on to the windings. Beware not to overdo it, like I did. I later tried to remove a few turns from the top of the choke but found it difficult because the varnish brushed on was so thick that it had encapsulated the fine wire. *(See Technical Editor's Note 6.)*

The Tuning Capacitor

Looking in the junk box during the construction of this amplifier, I could only find one capacitor with a value of about 100 pF: however, the plate spacing was definitely too close. The capacitor was initially installed in the completed amplifier but, as foreseen, it arced over between the plates.

To fix this problem, all the stationary stator and movable rotor capacitor plates were removed, except one stationary plate on the end. A small piece of circuit board material was used as a spacer and placed on top of this last stationary plate. Now one of the movable rotor plates earlier removed was placed on top of the circuit board material and re-soldered back onto the rotor. The circuit board material was now removed from between these two plates and placed on top of the newly soldered-in movable rotor plate. A stator plate was now placed on the circuit board material and re-soldered in place. This continued until as many plates as possible could be re-soldered back on to the capacitor stator and rotor.

Now that the newly modified capacitor was complete, a new problem arose. The capacitor seemed to have lost a lot of its capacitance because the plate spacing was almost tripled! So, to cure this problem, a small 30 pF doorknob capacitor was placed in parallel with the newly modified tuning capacitor. This doorknob is not shown in the photographs.

Plate Coil

The plate coil was made from 3 mm OD wire that was removed from a transformer used in a earlier project. The wire was straightened by putting one end of the wire in the vice, holding on to the other end with pliers and pulling the wire tight. This wire was then wrapped around an Aerogard® can as a temporary form. The wire was then removed, and the excess turns cut so only six remained.

Tension was then put on to the coil ends so the turns were permanently spaced by the thickness of the wire. The coil is now six turns, 50 mm ID, and 35 mm long. Appropriate lugs were soldered on to the wire to fit the threads on the insulated stand offs.

Panel Meter

A 0-200 mA meter was the only meter available from the junk box. I highly recommend a 0-300 mA meter be used, if possible, as the plate current will peg the needle point to the far right when the amplifier is driven with about 10 watts or more.

Chassis Parts

The heart of the chassis is the 3 in x 7 in x 12 in aluminium rectangle box. The front, back, bottom and internal chassis partitions were all made from wrecked aluminium signs recovered from the tip after the clean up from Cyclone "John"

which crossed the Northwest coast in December 1999. The top was the last part of the chassis to be made. It was cut from existing 1 mm thick aluminium sheeting that was on hand, and bent with a home-made sheet metal brake.

It was decided to recess the 813 socket by the length of the metal base of the tube to reduce the height of the chassis, and to give the amplifier a lower profile look. More along the lines of a lower and wider chassis rather than a taller and narrower look. Recessing the tube dropped the height by the thickness of the metal base of the 813 and the ceramic socket.

The majority of the chassis parts were "finished" by sanding them with water and 120 grit wet-and-dry sand paper. Sanding should be done all in one direction and done long enough to remove any pencil or pen marks, or scratches in the aluminium. After sanding, a light coat of cheap clear lacquer was sprayed on. The longer you sand the chassis parts the better they will look; but, beware that you may get sore fingers!

The Passive Grid

The passive grid resistor was originally 50 ohms, made up of five 10 ohm, two watt resistors in series, which were salvaged from an old commercial AVR (automatic voltage regulator). It was found during tune-up and testing that the small QRP rig just didn't have the power with 4 - 5 watts to develop enough screen voltage to properly drive the amplifier to full output.

A suggestion by Doug VK6ER was that the passive grid resistance be increased into the hundreds, or even thousands, of ohms and a tuned circuit be placed at the input of the amplifier. From the junk box a new passive resistance was made up at 1400 ohms, consisting of two 560 ohm one watt resistors in parallel, with five of these groups in series. Don't leave out the tuned circuit. If you try to drive the 1400 ohm passive grid from a 50 ohm 4 - 5 watt QRP rig, you'll really qualify for QRP. Probably in the micro watts!

Testing and Tune up

Before getting too anxious to fire up your new outback 813 amplifier, first check all your wiring and connections. Then check them again, and then check them yet again! You're bound to make at least one mistake. I actually made three.

Two were spotted in the under chassis before power was applied and the third was later found in the RF deck and was a connection I had forgotten to solder. Believe me, you'll see sparks and a bit of smoke from an amplifier trying to pass 300 watts on a connection that has not been soldered! Something a bit similar to a small Tesla coil!

Tune up was a cinch! A small amount of drive (single tone) of a few watts on 14.175 MHz was applied to the input of the amplifier with the SWR/Watt meter inserted in between. The two Arco mica trimmers on the input were adjusted until the SWR reading was flat. SWR at the band edges rose only slightly when driving it at the top and bottom of the 20 metre band.

Now the SWR/Watt meter was inserted in between the amplifier and a 50 ohm high power home-brew dummy load. Five watts was applied to the amplifier. The screen voltage rose rapidly to about 95 Vdc. Output on the watt meter indicated 135 watts. Ten watts was applied, screen voltage rose to 150 Vdc and output on the watt meter indicated 225 watts. 15 watts was applied, screen voltage rose to 175 Vdc and output on the watt meter now indicated 300 watts! Beware, with a high value of passive resistance it can be lightly driven, and the 813 bottle will take off like a rocket!

If plagued by low output but everything else seems to be working fine, try testing for shorts in the stack of

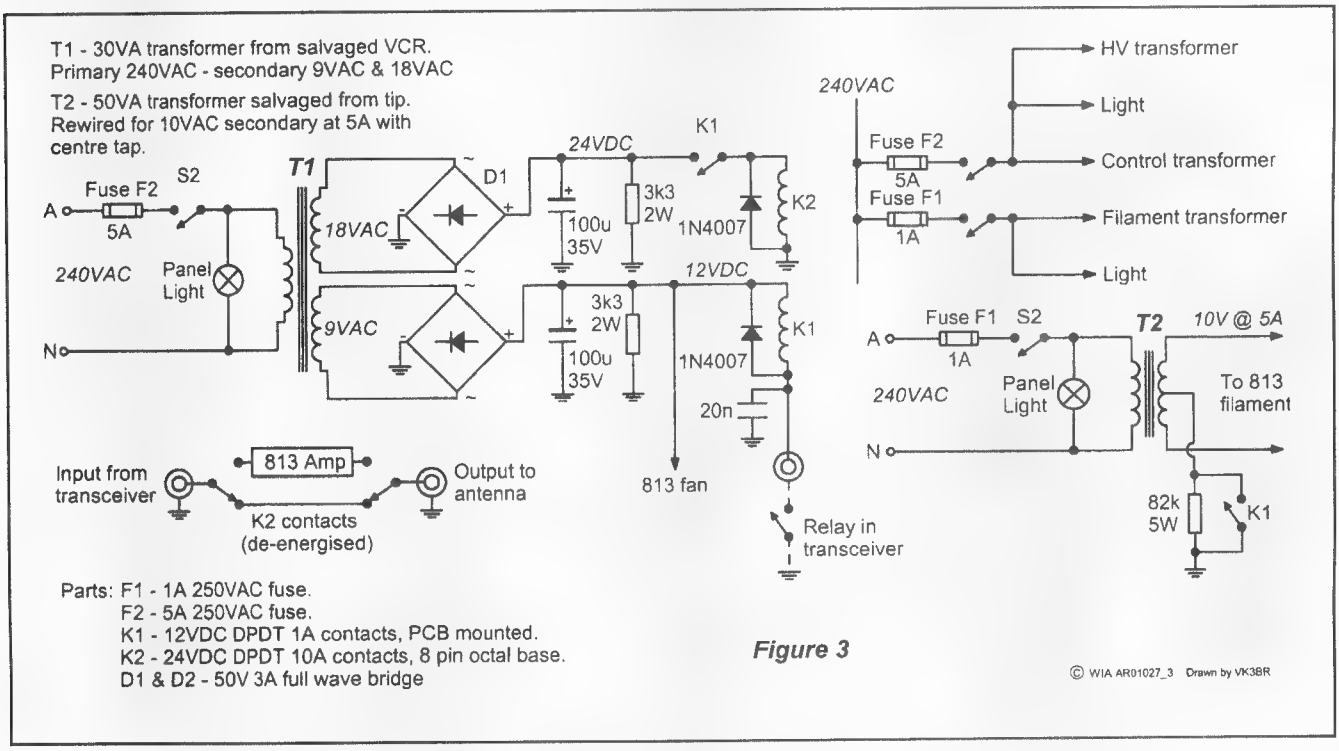

Figure 3

Fig 3 - The 813 amplifier low voltage PSUs and control circuit diagram.

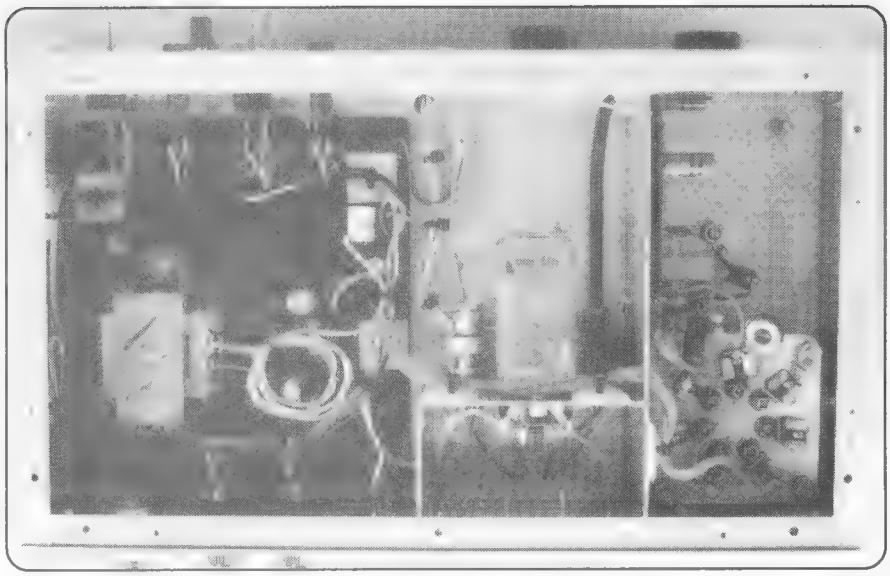

Photo 2 – Below chassis view of the 813 amplifier.

1N4148 diodes. I unknowingly drove the 813 for one very brief 50+ watt key up and shorted out one half of the diode stack. This plagued me for a few hours until I noticed low screen voltage being developed and finally traced the fault back to the diodes.

Summary

I realize that true QRP operators are probably shaking in their boots at the thought of connecting an amplifier to the QRP rig. But I consider myself an "all rounder" who dabbles in many aspects of the hobby, such as SSTV, QRP, satellites, packet and sometimes a plain ol' QSO on 20 metres.

All in all I feel this project has been a success. It has met all my initial requirements before construction, such as low drive and a compact amplifier design to fit nicely on the desktop, and exceeded my expectations with more then 100 watts output with just five watts drive.

During the construction of this project the only test equipment available was a digital multi-meter. All other equipment either didn't work properly or was unavailable. So, the only post construction testing available was on-air QSOs to other stations.

Total cost of the amplifier was around $25.00! Fair dinkum! Of course, that's not including my time.

Photo 3 – A view of the above chassis RF deck of the 813 amplifier.

References

1)The original article by G Thornley G2DAF.

2)G2DAF article by C J Bourke VK4YE, March 1999 and April 1999 Amateur Radio magazines.

3)ARRL Handbook 1990.

4)*Construction techniques from books and articles* by Drew Diamond VK3XU.

Technical Editors Notes

1. Resistors are normally rated at 350 V – 400 V peak voltage. You should make sure that this is not exceeded. Use more resistors in a series string if in doubt.
2. Some microwave oven transformers have differing insulation levels at each end of the main winding. They are purpose built for their intended use. Check the insulation if using in other than their intended circuit. This is particularly important if use in bridge or voltage multiplier rectifier circuits is intended. They may be adequate, but don't assume anything as an error may well be both dangerous and spectacular.
3. The 10 ohm metering resistor in the negative HV supply lead is in a potentially stressful position. In the event of a HV short or arc it may experience the full output of the HV supply and, in particular, the discharge current of the HV electrolytic capacitor string. This can result in the metering circuit becoming alive at high voltage. Ian White G3SEK, mentioned in the introduction as a source of the G2DAF article in *Reference 1*, uses a 100 W resistor in his amplifier designs. Use a generously rated component and don't skimp on safety.
4. HV Safety. An interlock is recommended to prevent accidental contact with High Voltage when opening the lid. Also a HV bleeder resistor is strongly recommended so that the HV electrolytic capacitor string is rapidly discharged when the supply is switched off. This is most important with HV capacitor blocks which pack a lethal charge.
5. Safety RF Choke. This needs to be a substantial item as it must stand the full discharge of the power supply filter and blow the primary fuse in order to protect you. The choke used in *Reference 2* would be OK.
6. The former used for the plate RF choke should be chosen with care. While wood may be OK in a dry climate if it has a low enough moisture content, you should proceed cautiously. Good quality plastic, or a ceramic former, may be simpler for many constructors. I note that wood has been used in HV apparatus but it has been selected with care and subjected to tests.

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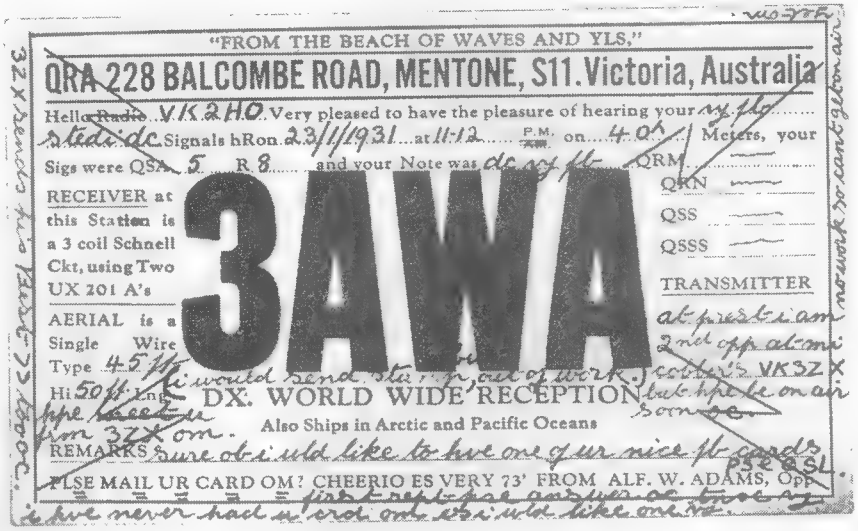
Hon. Curator: Ken Matchett VK3TL
4 Sunrise Hill Road
Montrose 3765
Tel: (03) 9728 5350

QSLs from Pre-war Australia, Japan and Brazil

3AWA


"FROM THE BEACH OF WAVES AND YLS,"
QRA 228 BALCOMBE ROAD, MENTONE, S11. Victoria, Australia
3AWA
DX. WORLD WIDE RECEPTION
Also Ships in Arctic and Pacific Oceans
PLSE MAIL UR CARD OM? CHEERIO ES VERY 73' FROM ALF. W. ADAMS, Opr.

To recent licencees the above QSL may look very like the callsign of a commercial radio station, but it is one of many forms of short wave QSLs issued before World War 2. In those days both SWLs and radio amateurs themselves often requested and received callsigns bearing their own initials. The SWL of this card was Alf W. Adams, hence the 'AWA'. Other forms of SWL QSL cards were VK-OSL, OA BCL, (OA was the older Australian -prefix) or simply OA, 0A3, Australia, SWL. The situation was the same in several other countries, particularly the USA

Rectification of AC was not as efficient in early days as it is now, hence Alf's signal report of 'vy fb stedi dc signals'. He also uses the early form of signal report QSA 5 R8, (Strength 5, readability 8) which was replaced by the RST system. Sometimes QSA W5, QRK5 Tone 1'9 was used. Some operators used QRI to indicate tone. The QSS on his card was used to indicate any fading of signal. His receiver was the popular Schnell receiver. Schnell was the Traffic Manager of the ARRL and one of the pioneers of DX operations, in fact the first amateur operator with John Reinartz to bridge the Atlantic from USA to France, but that is another story. The code QSSS meant 'Is my signal swinging?' Both QSS and QSSS codes are not found in official Q-code publications. The UX201A valve was one of the most popular valves of the 1920s and was a simple triode frequently used, as a detector and audio amplifier. The date of the QSL is 31 January 1931, which was a difficult time for all economically. Alf s comment 'i would send stamps but out of work" would seem to reflect this fact.

JX1X

QSL FROM AJ-JXIX
Dear OM:
26. Apr. 1928.
Rcd ur kind QSL, tnx vy om.
JXIX
ARRL
JARL
RCVR: DET ES ONE STEP, BALDWIN 'C'.
XMITTER: L.C.H. CKT. & CX-310 TUBE. QRH 38 M.
ANTENNA: 2nd HARMONIC current FEED.
DX WKD: 5 CONTINENTS. HR OLD AJ-3AA.
QRA: K. KASAHARA 880 TENNOJI-CHO OSAKA JAPAN.
住所 大阪市住吉區天王寺町八八〇
PSE QSL. BEST 73'S, SIG

This QSL from Japan dated 26 April 1928 and posted from Hong Kong the following month shows the rare prefix JX. Nowadays allocated to Jan Mayen, the JX prefix was the first prefix to be allocated to Japan. The letter J had been allocated by the ITU to Japan from an early date. Even in 1913 it had been allocated by the Bureau International de L'Union Telegraphique of Berne to Japanese ships and coastal wireless stations. When experimental stations became recognized by governments their prefix allocation closely followed, but was not always identical to that given ships and coastal stations. In the January 1928 issue of QST I came across a notice concerning Japanese amateurs, and I reproduce only relevant portions of the text:

The Japanese amateurs have at last won the right to build and operate amateur experimental stations. ... The only wavelength on which transmission can take place is 38 metres. The maximum power output is 10 watts and some licenses allow only 4 watts output. These private experimental stations are strictly prohibited from handling messages and also from 'chewing the rag'.... a report on each and every such communication must be sent in to the government official who handles the matter.

The article lists several stations with the prefix JX which are said to be those already assigned this prefix. However in this particular listing the JX prefix is not followed by a numeral but with a letter eg. JXAX.

SB-2AR

This pre-war QSL from Brazil carries the 'intermediate! SB. These prefixes, which were the precursors of our present day prefixes, were allocated according to the continent where the radio station was sited, for example N = North America, S = South America, E = Europe, A = Asia. O = Oceania. F = Africa. Following the continental symbol was the country identifier. For example, Australian QSLs carried the prefix OA, Brazil QSLs the callsign SB. the QSL SB-2AR was sent to an English operator EG2CX in May 1928 not lone before our present system of prefix came into being in January 1929.

The QRK symbol indicated the degree of readability on a scale of 1 to 5. Often the letter 'R' preceded or followed this symbol. The code QSB originally meant 'Is my tone bad?' or 'Is my spark bad?' and was used to indicate the quality of the C.W. signal. The sender of the QSL has written 'rac' next to QSB meaning not 'raw AC' but "rectified AC'. Although it may be thought that D.C. rectification might give rise to a fairly pure note, this was not the case in early days. The reason for this was the lack of efficient filtering. Chokes and smoothing condensers, especially electrolytic types, were often not used at all due to their cost. The now disused QRH symbol indicated the wavelength transmitted, in this case 20 metres. (What appears like 202 is really 20 followed by the Greek letter lambda indicating wavelength.) His transmitter was a T.P.T.G. (tuned plate, tuned grid) type using a UV203A with 1200V on the plate. This valve, popular in the 1920s, was made by RCA of New Jersey and was a popular '50 watter' triode.

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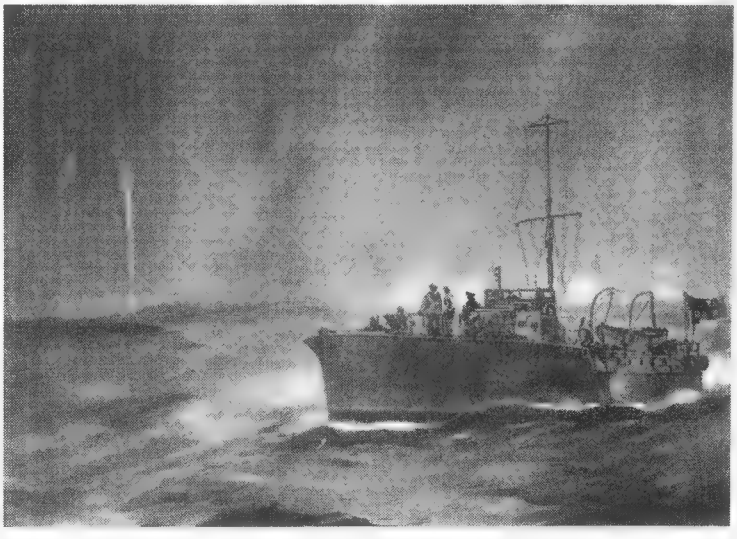
Submorse!

Submitted by Fred Smith VK2BN

WW1 Submarine signaling surface craft using expelled air and water. From Illustrated London News November 15 1919 page 781 a drawing by F.H. Mason



Let's go WARCing

Bill Day VK3SWD
33 George Street
Nhill VIC 3418

The need for an antenna on the WARC bands that was not too large was the reason this antenna came about. Any amateur whose QTH is a standard residential block knows how important this is. I had good results with an 80-40 m trap antenna using traps wound with coaxial cable. I decided to make a similar antenna for the WARC bands.

This antenna should be quite easy to make using minimal equipment that is readily available and inexpensive. All that is needed is a GDO and an SWR bridge (an analyser would make the job easier but it is not essential), 11 metres of copper antenna wire, 0.5 metre of 43 mm OD PVC pipe, three metres of RG-58 coax cable (use solid dielectric coax, not foam, as it reduces distortion of the cable when going through the start and finish holes in the PVC pipe), and two insulators.

First cut four 110 mm lengths of 43 mm OD PVC pipe. Then drill the holes as shown in Fig 1. Relieve the holes for the coax by elongating and chamfering with a drill or a file to avoid distortion of the coax as it passes through the PVC former.

Next, prepare the coax into the lengths as shown in Fig 2, pulling the centre through the braid at the end of the outer sheath. Pass approximately 1.5 cm through the "start" hole and wind 3.75 turns for traps 'A' and 5.1 turns for traps 'B'. You should find, in both cases, about 1.5 – 2 cm of cable will be through the finish hole. Join and solder the shorter inner and outer start and finish leads as shown in Fig 1. This now allows the braid to become the inductance and the inner conductor the capacitance to form the resonant trap circuit.

Using a GDO, tune traps 'A' to 24.90 MHz by spreading or compressing the winding. Tune traps 'B' to 18.1 MHz using the same method. Make sure both pairs of traps are matched pairs. A receiver tuned to the frequency can be used to make sure that the GDO is on frequency.

Now, assuming you have a 1:1 balun for the centre feed point, fit the two by 27.55 metres of wire to the balun and the braid (input ends) of traps 'A' using screw type electrical connectors at this stage. Join the 515 mm wires to the centre conductor (output) of traps 'A' to the braid (input) of traps "B", again using screw connectors.

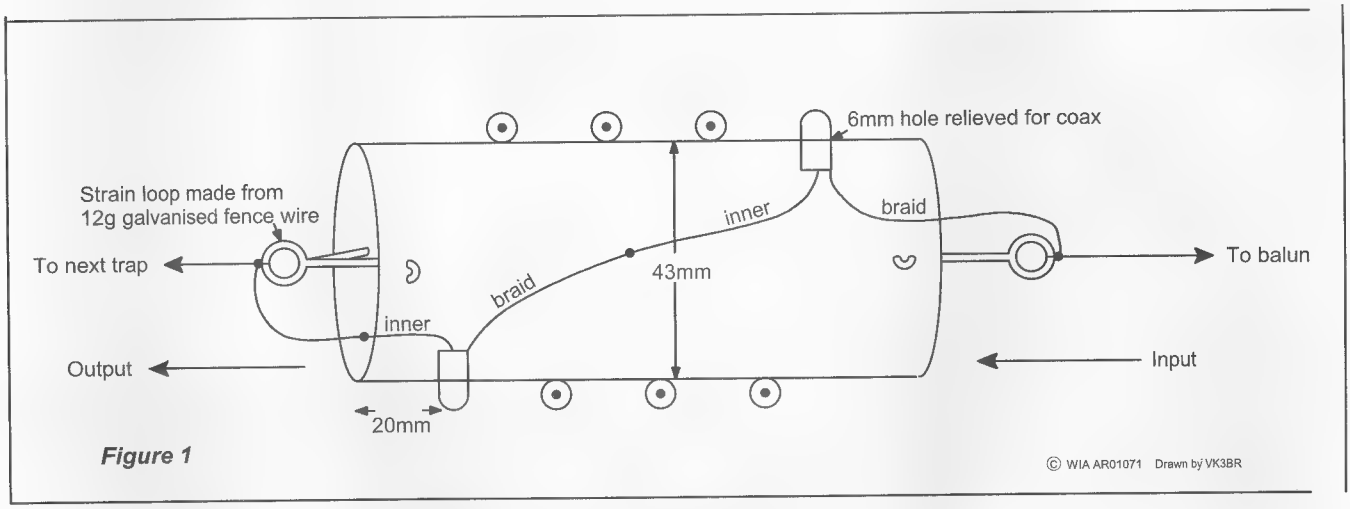


Fig 1 - Coaxial cable trap construction.

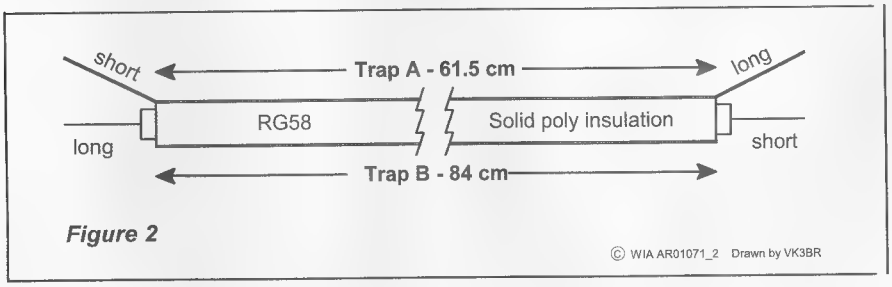


Fig 2 – Details for cutting and stripping the coaxial cable used in the traps.

Sorry! We were wrong

Gippstech Photographs AR October page 27 were taken by John Patterson VK3ATQ and passed to the Editor by Ron Fisher VK3OM. Sorry John for the delay in acknowledging your handy work. Editor.

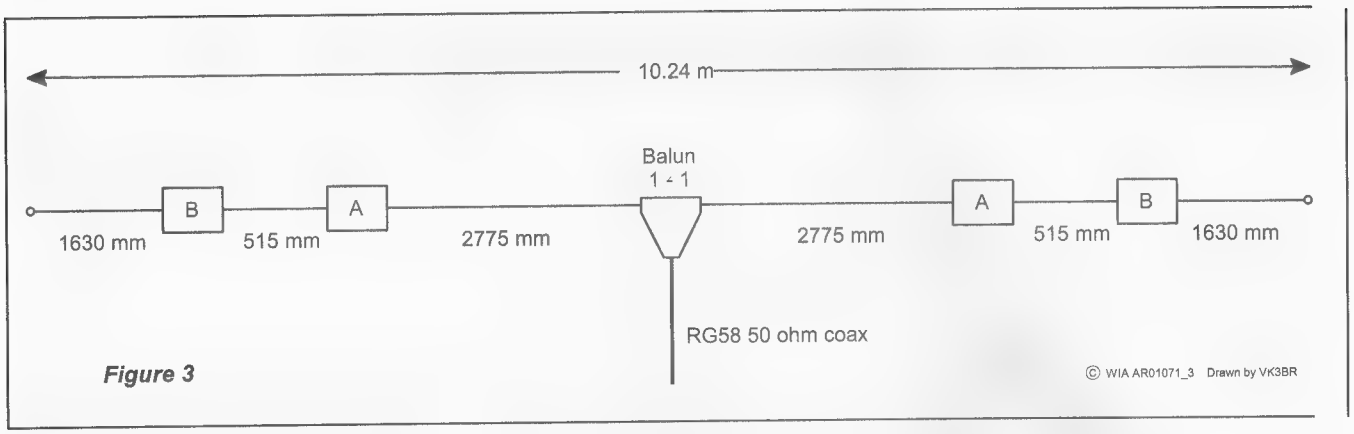


Fig 3 - Dimensions and layout of the WARC bands antenna using coaxial cable traps.

Last, connect the 1.63 metre wires from the centre conductors (outputs) of traps 'B' to the insulators, allowing a little extra for tuning. It's now time to raise the antenna and connect the SWR bridge and transmitter.

If you have an antenna analyser the job is easy. First tune the 24.9 MHz section by shortening or lengthening at the input of traps 'A'. A 1.2:1 SWR should be easy to achieve. Then tune the 18 MHz section using the same method. I found this 515mm length to be very critical indeed.

Last, tune the 10.1 MHz section, occasionally checking the two previous results.

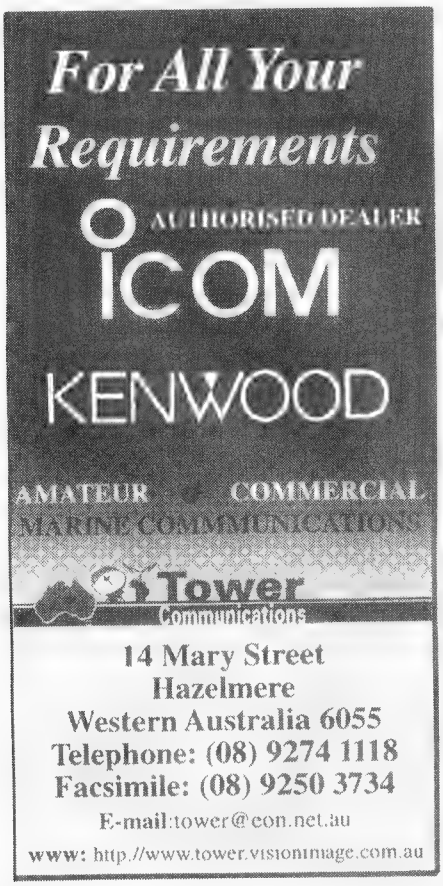
When all tuning has been done, remove the screw connectors and solder the joints. Use silicone to seal all ends of the coax in the traps, and the solder joints.

Now it's all done. So let's you hear you on the WARC bands!

Technical Editors Note

The Silicone Sealing compound used to seal the coaxial cable ends and joints should be chosen carefully. The compound should be one that does not produce a potentially corrosive compound when setting. This may be called neutral cure or similar. Any compounds that release acetic acid when setting should be avoided. Refer RSGB publication *HF Antenna Collection*, published 1991, P184 for further information.

BT



Try this

A home brew reference library

Peter Stuart, VK2BEU

I was running out of space to store my 25 year collection of AR magazines. Thinking about it, I realised I am really only interested in the technical articles and some history. So I decided to cut out and file all the articles of my choice, and give the unwanted parts of the magazines to the paper recyclers.

I carefully cut out the pages I wanted, using a Stanley knife, and filed them in three Marbig office files. Where two wanted articles were printed back-to-back on the same page, I photocopied one of them. Using plastic dividers available from stationery suppliers, I filed the articles under headings such as Antennas, Receivers, Transceivers, Test Equipment, Interference, History, etc. There are some sub-divisions under these headings as well.

It has taken me about a year of occasional spare time (mainly because I find so much of interest to read as I work), but I now have a technical reference library the equal of (actually better than) the ARRL publications. As a side benefit, I've rediscovered project articles I had forgotten about and I've become interested in getting back into home brewing!

Taming the quad antenna

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During the course of the year 2000, I began the preparation of my equipment to take part in the operation of special event station VI5RAS. Because some of the planned activity would be on a portable basis, and requiring a spare antenna, I decided to volunteer the three band Yagi atop my windup tower.

The complete antenna (with magpie)

While considering a replacement my thoughts turned to previous times, when I had built and operated a two element quad for 14 MHz and enjoyed good results, however I always felt that it was not quite as good a performer as it should be. Not being well read on the subject, I assumed that at its operating frequency, I could adjust it for a minimum SWR by lengthening or shortening the elements and I also assumed that the antenna could be fed directly with 50 ohm coaxial cable.

The result was an antenna with an obscure resonant point and a fairly high SWR across the 20 metre amateur band. It was also apparent that after various adjustments were attempted near ground level, raising the height of the array changed the point of minimum SWR. Nevertheless I used the array for many months with sometimes surprising results until some storm damage occurred and although repairable, I disassembled it and replaced it with a commercial Yagi.

Now wishing to try again and armed with hindsight I consulted a few textbooks, (see references) and so discovered that the dimensions of the quad elements, for a particular frequency, are set in concrete so to speak. It also became apparent that feeding the array with 50 ohm coax, even though the antenna may have an impedance of 50 ohms at its chosen frequency, would result in unwanted feedline radiation, thereby not directing all of the power in the desired direction. In addition I leant that any adjustments made at one height would not be correct at another height.

The impedance of a two element quad at a half wavelength in height with both elements spaced for maximum gain is in the region of 80 ohms. This can be adjusted to 50 ohms by reducing the element spacing to 0.09 of a wavelength (about six feet on 14 MHz). Now, at the expense of some gain, (see fig. 1 & 2) and if the array is fed via a one to one voltage balun to eradicate feedline radiation (essential), the result is a workable antenna with a gain of around six dBd.

If a director is added, near optimum spacing is now allowable, as the effect of the added element is to reduce the impedance from 80 ohms to slightly less than 50 ohms. Some minor juggling with the spacing of the three elements will now give the desired 50 ohm impedance, assuming of course that this can be established at the operational height of the antenna. A three element quad would then seem attractive but with metal masts the driven element is too close to the structure causing unwanted interactions. A four element quad ie. having two directors seems a solution but tends to become a mechanical monster requiring a 30 foot boom together with associated bracing and strengthening required.

My desire was to achieve the maximum gain and efficiency possible with a two element quad, (figure 2) hence an element spacing at around 10 feet was required, plus a matching device for the feed and a means of preventing feedline radiation. Also I needed to be able to easily resonate the array at its operational height.

The matching circuit I chose was a refined gamma match ie. an omega match which is a gamma match with an extra variable capacitor (Fig. 3). The gamma wire in the case of a quad is more convenient if it is fixed and not adjustable so alternatively it is resonated by the omega capacitor. The dimensions for the gamma wire per band are shown in figure 5, note the narrow spacing between the element wire and the gamma

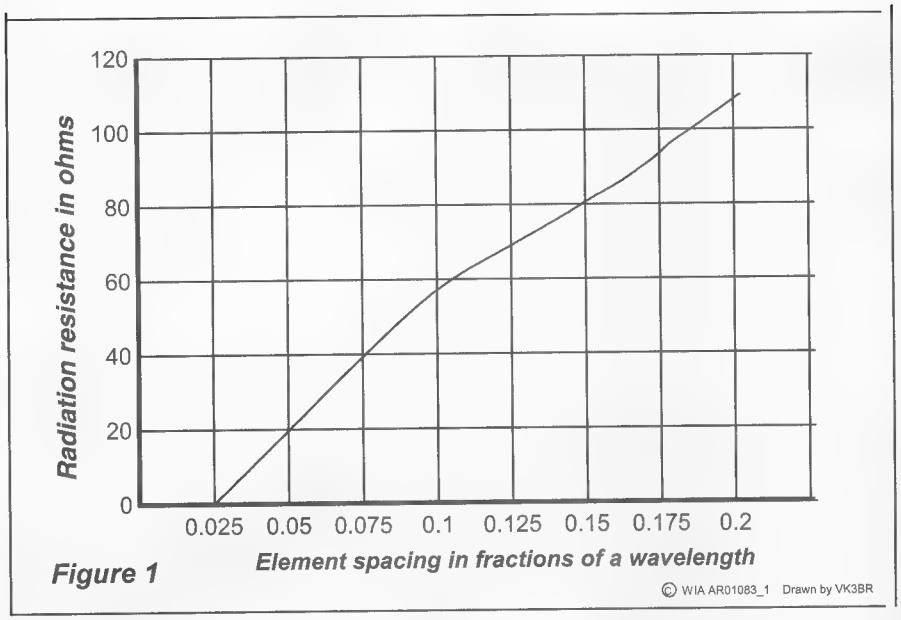


Figure 1. Element spacing in fractions of a wavelength

wire, this is due to the relatively small diameter of the conductors as compared to say the tubular elements of a Yagi.

The gamma and omega variable capacitor values per band are also shown in figure 5. The gamma capacitor should have well spaced plates; narrower spacing is allowable with the omega capacitor (Fig. 5). According to some publications a gamma/omega match prevents feedline radiation but one other publication states that it is not fully effective, so a choke balun being 8 feet of the transmission coax wound into a coil was used at the feedpoint as added insurance see figure 3). Note that a one to one voltage balun is not suitable for use with gamma or gamma/omega matching devices.

The quad driven element is cut according to the formula 1005 divided by the frequency and the reflector is cut to the formula 1032 divided by the frequency. In each case the wire is made two inches longer to allow for twisting together and soldering. If a director or directors are to be employed they are cut according to the formula 975 divided by the frequency.

Spacing of the elements for any band is calculated by the formula 1005 divided by the frequency the result then being divided by 7. As an example for a quad at 14200 MHz, 1005 divided by 14.2 equals 70.77 feet which is total length of the driven element. 70.77 feet is now divided by 7 which works out at 10.1 feet spacing.

Construction

Hubs that are fabricated by welding together thin walled steel tubing are relatively light and indestructible. However with care quite respectable hubs can be fashioned from a thick plywood plate using L brackets, together with an exhaust pipe clamp for boom attachment and sturdy U bolts for fixing the spreaders in place. Fibreglass tubing is an ideal material for the spreaders but expensive, bamboo can also be used but is difficult to obtain. My spreaders where made from a combination of aluminium tubing and eight foot lengths of close grained half inch timber dowelling, the dowelling being used on the outer part of the spreaders.

Holes are drilled in the outer parts of the spreaders to allow the wire to pass through, with only a small amount of silicone sealant being used to secure the joint while providing a little flexibility. The distance of the hole from the hub centre must be accurately positioned so that the wire is not too tight or slack. The measurement can be calculated by dividing the total of each element length by 5.655.

As an example assume a frequency of 14.200 MHz, for the driven element 1005 divided by 14.2 equals 70.77 feet divided then by 5.655 the result is 12 feet six inches being, the distance from the hub centre out to the hole on each spreader. For the reflector 1032 divided by 14.2 equals 72.67 feet divided then by 5.655 the result is 12 feet 10 inches.

One should not skimp on the wire used for the elements; thin or brittle wire

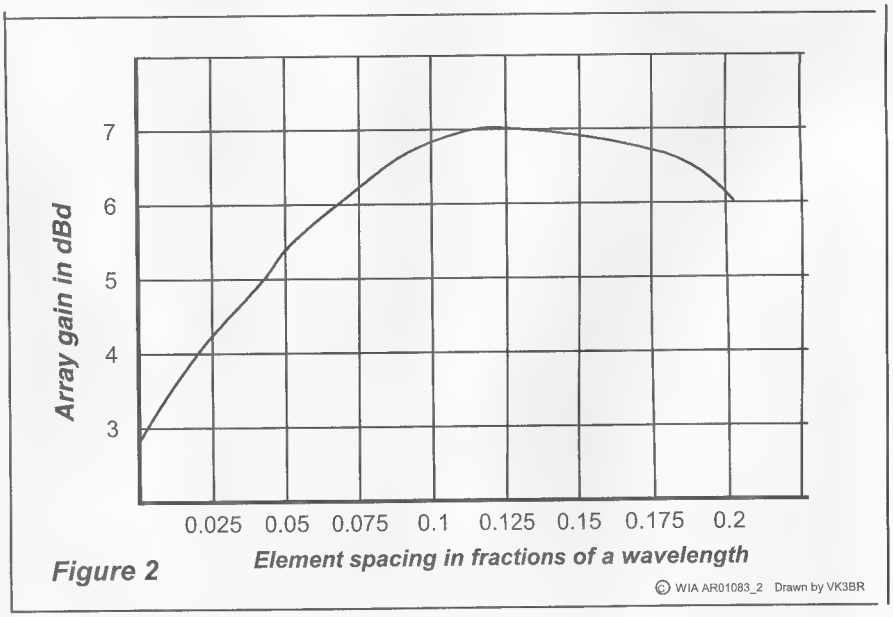


Figure 2.Element spacing in fractions of a wavelength

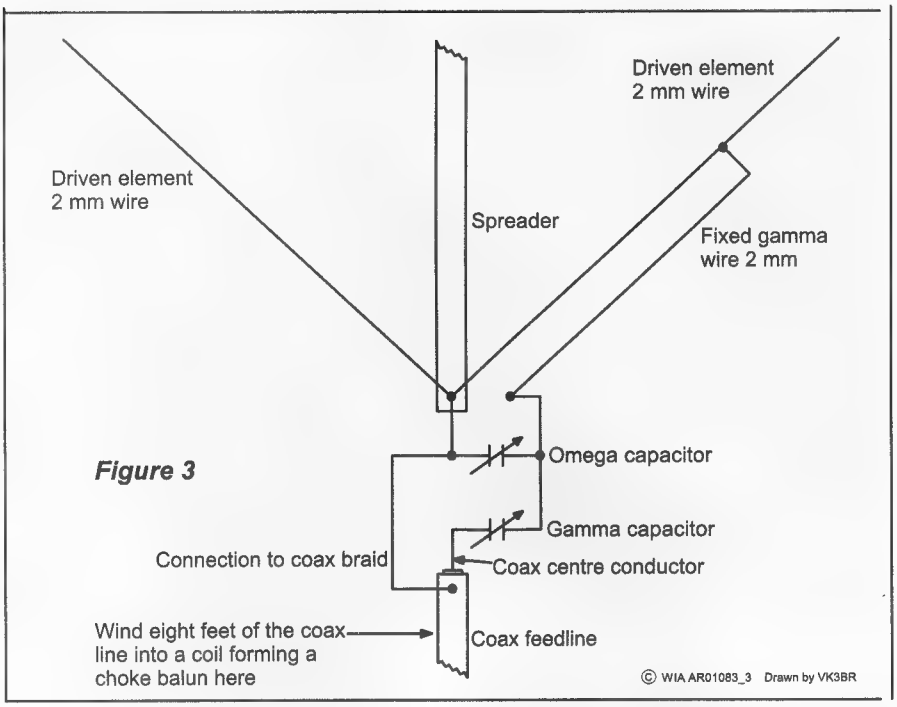
will break easily and is I believe the most common damage experienced with quad antennas. I used two millimetre winding wire purchased from a local transformer manufacturer. Avoid stranded copper wire because as the copper strands become oxidized and insulated from one another unknown lengthening effects may be introduced. Also avoid plastic insulated wire as the insulation changes the resonant length of the wire.

My quad was rotated 90 degrees into the diamond configuration, one spreader then being used for the attachment of a large jiffy box which housed the gamma and omega capacitors and served as a connection point for the feedline. Both capacitors were mounted so that their shafts protruded through the sides of the box then having pulley wheels attached, (discarded wire spools) this with the aid of long lengths of twine allowed me to adjust both capacitors for a one to one SWR at the array's proper operating height. The ability to do this was one of my reasons for choosing this type of matching circuit.

I used a ten foot length of 2.5 inch diameter aluminium tubing for the boom, but a wooden boom is also possible particularly if the hubs are made from plywood. Then a tight joint well glued between hub and boom will suffice without the need for any further fasteners. Needless to say any wooden structure used outdoors must be suitably protected, In my case some thinned estapol (for penetration) in two or three coats preserved the timber parts. The publications mentioned in references, give some useful hints concerning the materials used in the construction of quad antennas.

Assembly

I assembled my quad bit by bit; firstly the boom with hubs attached was carried to the top of the wound down mast and bolted loosely into its cradle. Now by revolving the boom each spreader is attached to the hubs, the boom being slid back and forth in it's cradle in order that each hub is within arms reach. The wire elements were fixed in place again by revolving and sliding the boom in its cradle. Each element is a continuous loop (see fig 3 and 4B) so the extra two inches of wire on each element is scraped and cleaned down to bright copper before twisting together and soldering.



fiogure 3. Omega Match Circuit

Durability

The main drawback of any directive quad is the potential for storm damage. Any attempt to beef things up will increase weight and cause strain on other parts of the array. These parts in turn will need strengthening and so it goes on. If a boom, which is supporting heavy elements, collapses at its pivot point the elements will be destroyed regardless of how strong or rigid they may be. The driven element will be

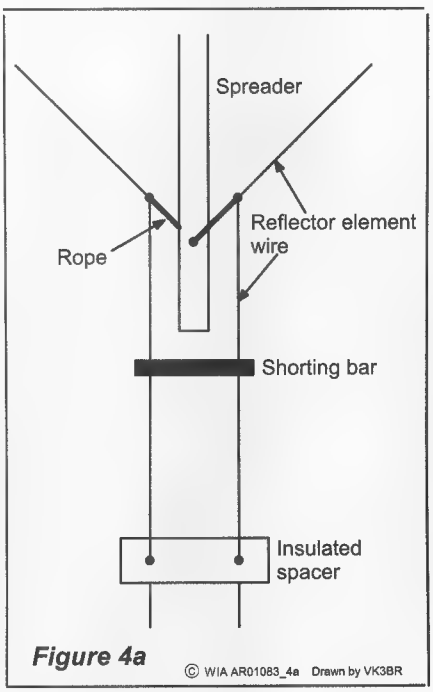


Figure 4a. Adjustable stub for the reflector

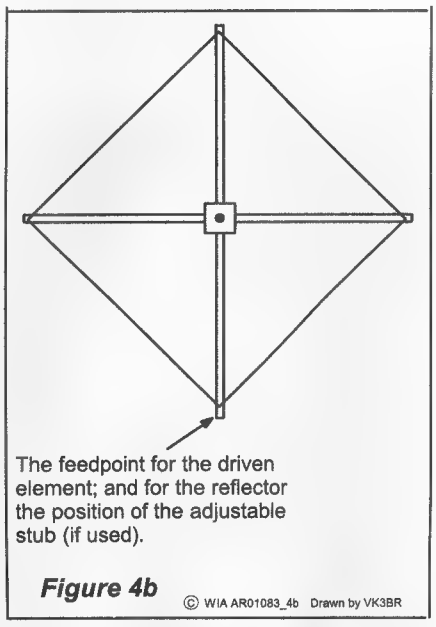
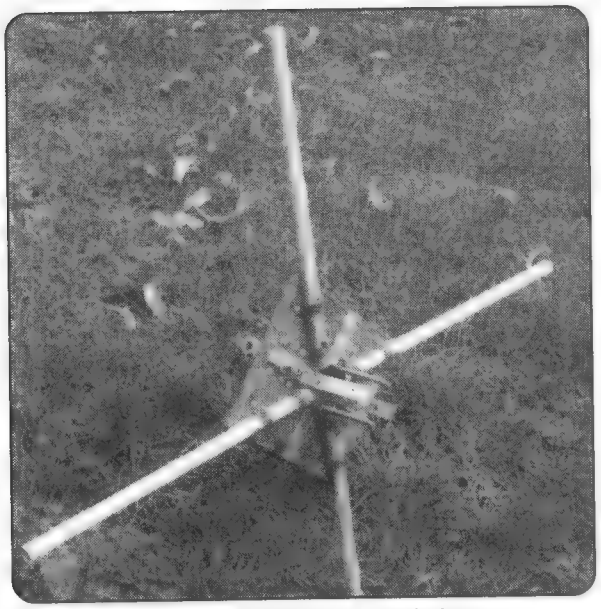

The feedpoint for the driven
element; and for the reflector
the position of the adjustable
stub (if used).
Figure 4b
© WIA AR01083_4b Drawn by VK3BR

Figure 4b. Spreaders — element wire arrangement for the driven element & reflector



Quad hub using a plywood plate

heavier than the reflector so the boom pivot point needs to be adjusted accordingly. This will prevent undue strain on the boom's attachment point and also help it cope with the load of each element.

The two element quad in question has withstood windy conditions for many months, I attribute this to having sound hubs, outer spreaders using flexible timber dowelling being free of defects in the grain and relatively heavy element wire, plus an overall tendency towards light and careful construction.

Commissioning

There appears to be little or no interaction between the two variable capacitors. It is very easy to adjust them for a one to one SWR at the frequency at which the elements are cut and resonant, and at the operational height of the array. Figure 6 shows the resulting SWR curve, this could appear to be a lot flatter at the end of a long random length of coaxial cable. The best procedure is to first adjust the antenna using a half wavelength (Allowing for the velocity factor) of 50 ohm coaxial cable connected to your transmitter with a SWR meter in line, this will give a true picture of the SWR curve.

This may change if in actual operation the coax feed is a random or unknown length, possibly making the curve flatter but the one to one SWR point will not change. One bright idea I had was to install electric motors with gears in the jiffy box to adjust the capacitors remotely by wire. This would be the ultimate (and true) antenna tuner; I gave it some serious thought for two minutes and dismissed it figuring that my simple pulley system was far less trouble. My quad was constructed for 14 MHz as my rostered operating times for VI5RAS where mainly the midnight to dawn shift; however a quad can be built for any band by following the formulas presented here.

If " Murphy" has a law concerning antennas I am sure it would be, " A poor antenna will first be used when band conditions are such that any old bit of wire will work the world and the operator will be delighted with his completed project. Conversely " A good antenna will first be used when the bands are down and the operator will be so disgusted with his creation that the array is torn down without delay. The answer of course is to evaluate your creation over at least a number of days before coming to any rash conclusions.

Performance and evaluation

Initial tests can be carried out on receive only, swinging the array towards and away from a distant station will indicate quite dramatically how the antenna is working. A 59 signal from a station 12000 km or more distant should drop to strength 2 when the antenna is pointed in the opposite direction. The comparison is not so defined when listening to a signal which is well in excess of 59 eg. A 59+10 db signal will only drop to 59 or so when the array is facing the opposite direction.

There will always be exceptions to the above, relatively close stations, the radiation angle of incoming signals, in which direction the received signal is being transmitted all have an influence on the transmitted and the characteristics of your "S" meter will all have an influence on the results. It will become apparent that the front to side ratio is slightly better than the front to back ratio, this is normal with a two element quad array.

On transmit one can only rely on signal reports received and again exceptions will always occur, but to quote an example, during poor band conditions on the long path to Europe a station using a kilowatt was barely making 58. On answering his call with 100 watts I received an immediate response and a signal report of 55.

During my operation of VI5RAS short path to Europe using 400 watts many

The driven element showing the gamma wire, feedpoint and coaxial choke

stations remarked about the strength of my signal. Sometimes while working a huge European pileup and South African stations began calling, swinging the quad towards the west brought these stations in nicely, whilst reducing the QRM from the European stations still calling,

I was pleasantly surprised to find that although my QTH is in a weak television reception area, TVI was all but non-existent with this array. During my midnight to dawn operating shifts I did record some programs and at 400 watts PEP only an occasional faint flicker was evident on speech peaks.

Modifications

One possible modification is to provide an adjustable stub to the reflector (Fig. 4), this making the element slightly longer, if required, to improve the front to back ratio if the antenna is operated at a lower frequency than it is cut for. As an example, the design frequency is 14.200 MHz, operation on 14.000 MHz is sometimes required the reflector is now 12 inches to short. On 14.100 MHz the reflector is 6 inches to short.

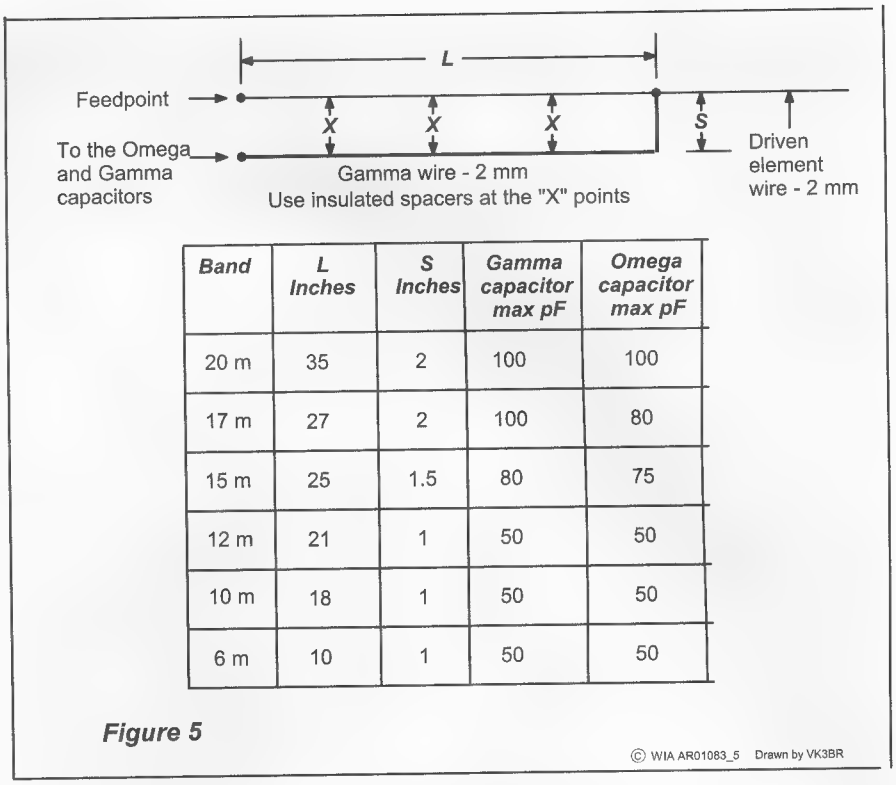
While the array is operated at or above it's design frequency the shorting bar on the reflector stub (Fig. 4) is left in its uppermost position at which the reflector length is correct for the design frequency. Any excursions to below the design frequency would require downward adjustment of the stub to lengthen the reflector element.

Without the use of an adjustable stub, having the reflector too long is not as detrimental as having it too short, so it may be wise to cut and resonate the array at the lowest part of the band you intend using. Any excursions to a higher part of the band will render the reflector too long and increase the SWR, however the array will still be performing near optimum gain.

This doesn't apply if a director or directors are used, as being too long is more detrimental than being too short. In my case I rarely operate SSB below 14.150 MHz so the two element quad was cut and resonated at that frequency. I would obviously lose some gain and front to back ratio down in the CW section.

Although not discussed here another modification possible is to interlace one or two more elements into the array to allow multi-band operation (refer to the publications mentioned in the references).

A two element quad is cheap and easy to build and doesn't make huge demands on one's metal working skills. It also tends to be more versatile than a three or four element array and if constructed carefully can shrug off the potential for storm damage. A quad has less wing span than a Yagi and in comparison, at low operating heights the quad will exhibit a lower angle of radiation.



Band	L Inches	S Inches	Gamma capacitor max pF	Omega capacitor max pF
20 m	35	2	100	100
17 m	27	2	100	80
15 m	25	1.5	80	75
12 m	21	1	50	50
10 m	18	1	50	50
6 m	10	1	50	50

Figure 5

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Figure 5

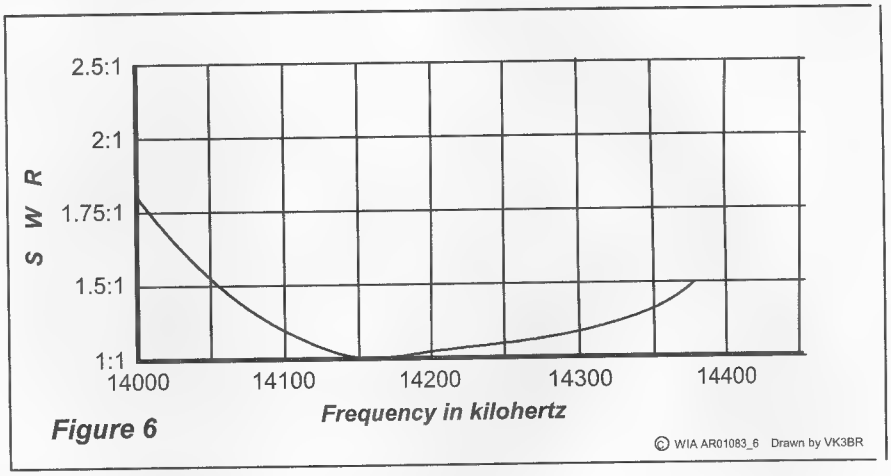


Figure 6

© WIA AR01083_6 Drawn by VK3BR

Figure 6

References

"All about cubical quad antennas" and "Beam antenna handbook" both by William I. Orr, W6SAI and Stuart D. Cowan, W2LX.

"Radio Communications Handbook" (5th edition volume 2) by the Radio Society of Great Britain.

New ways to improve SSTV images

Friedrich Becker VK4BDQ

VariSSTV and IAL Inverse Alternate Line

Many amateurs, since computer power became very affordable, are sending and receiving pictures using SSTV programs. Many programs have been written for DOS and Windows. One of the latest arrivals MMSSTV, written by Mako, JE3HHT made a huge impact on SSTV. Not alone this program is well written and it is also free of charge.

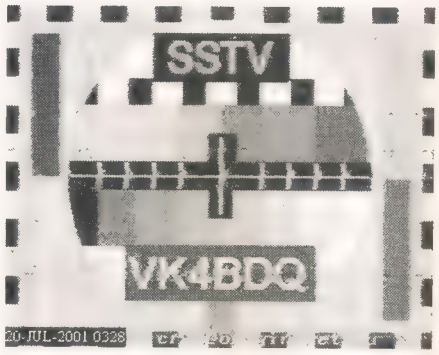
From Version 1.02 on Mako has introduced two new methods to improve the quality of an SSTV picture. These methods are called VariSSTV and IAL Inverse alternate line, developed by Samuel Hunt and adopted by Makato. Both methods can be used together and applied to most of the SSTV modes.

VariSSTV

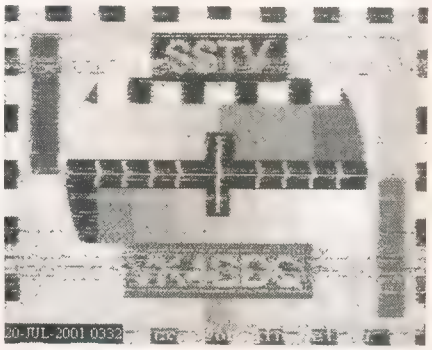
I am not going too much into the theory behind it, but in general it is a way to transmit the colors of a picture using different output levels for every colour. As a result, your PA, valve or transistor, is driven at much safer levels.

I ran some tests on different days, to find out more about this new method using the replay of the VK3DNH repeater for my tests. VK3DNH (14.236 MHz). Sending a picture through a repeater can not give the correct information, but reflects a fair idea of the signal strength at the repeater location. The distance between the repeater and my location is approximately 180 km. All tests have been carried out within minutes to avoid drastic changes in propagation (for the purists, I know conditions can change within seconds, and other parameters can influence the picture as well) The pictures shown here representing only one part of a sequence. Signal strength on my receiver was approximately S5 all the time. I will continue with my tests on the 20m band, to find out how fading, phase shifting and others variables affect the quality of the received image.

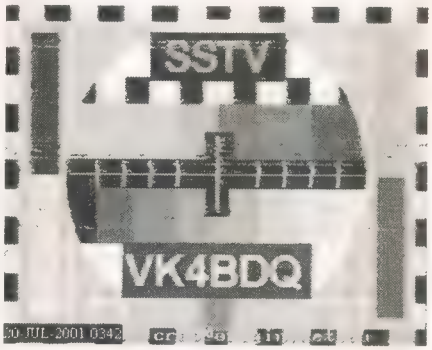
All pictures using VariSSTV have shown improved qualities; even a reduction in power to 50W has not affected the quality. It should be clear this method can and will not eliminate QRM or other interferences, but it will improve the image.



Output 100W and VariSSTV



Output 100 W without VariSSTV



Output 50 W using VariSSTV

IAL—Inverse Alternate Line

Hue

The Hue function shifts all the pixels in an image around the colour wheel to a different point. If you change the red pixels to green, the green pixels will turn to blue and the yellow pixels to cyan.

Saturation

The Saturation function alters the amount of grey in a colour. The level of grey increases as the saturation decreases.

After some trial period some people argued VariSSTV is causing an affect called Hue Shift. Hue Shift is introduced by changing the frequency of the modulation, (SSTV is using FM for the audio) causing a given colour to shift towards a different colour. (See box). This has nothing to do with colour saturation; colour saturation shifts the colour towards darker or lighter levels. To prove if a hue shift is taking place Samuel has introduced a small program called IAL – Inverse Alternate Line. This program applies a type of filter or overlay to half of the picture on the transmission side. On the receiving side the program is applied again reversing the process. Covering only 50 percent of the picture with this overlay makes it possible to observe any effects on the treated and untreated part of the image, I have provided three images send from a German Station, using VariSSTV and IAL, (IVAL for short), together. Even

under unfavorable conditions it is possible to recover at least a meaningful image. Marc, WA4IRE has conducted and continues an extensive test program with some US stations.

The program can be downloaded from Samuel Hunt's website, look at http://www.supersam.com.uk/ival/.

MMSSTV is available from http://www.geocities.com/mmhamsoft/mmsstv/index.htm

If you are interested, download this program and give it a go. If you need help or a partner, feel free to drop me a line at VK4BDQ@qsl.net

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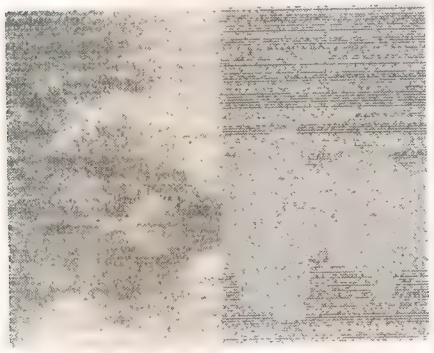
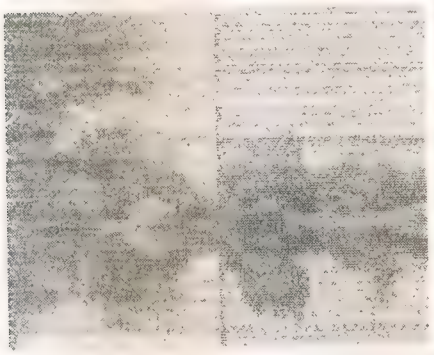
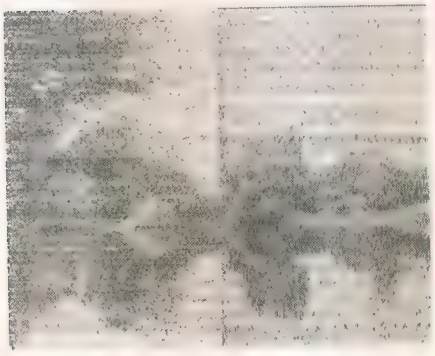


Picture received



Picture processed



Processed and filtered

Classification of emissions

GL de Henry VK8HA FedIWCOORD
VK8HA@OCTA4.NET.AU

The following is the first episode of a few explaining classification of emissions:

Classification of emissions and necessary bandwidths

1. Emissions shall be designated according to their necessary bandwidth and their classification
2. Formulae and examples of emissions designated in accordance with this Appendix are given in *recommendation ITURR AM 11.38*. Further examples may be provided in other ITU-R recommendations. These examples may also be published in the preface to the Inter-national Frequency List.

Necessary bandwidth

1. The necessary Bandwidth shall be expressed in three numerals and one letter. The letter occupies the position of the decimal point and represents the unit of Bandwidth. The First character shall be neither zero, nor K, M or G.
2. Necessary Bandwidths.
   Between 0.001 and 999 Hz shall be expressed in Hz. (Letter H)
   Between 1.00 and 999 kHz shall be expressed in kHz (Letter K)
   Between 1.00 and 999 MHz shall be expressed in MHz (Letter M)
   Between 1.00and 999 GHz shall be expressed in GHz (Letter G)
   For the full designation of an emission, the necessary bandwidth indicated in four characters, shall be added just before the classification symbols When used, the necessary bandwidth shall be determined by one of the following methods:
3. Use of the Formulae and examples of necessary bandwidths and designation of corresponding emissions given in *Recommendation ITU-R SM.11.38.* computation, in accordance with other ITU-R Recommendation; measurements, in case not covered above.

Next instalment in January 2002 issue of AR.

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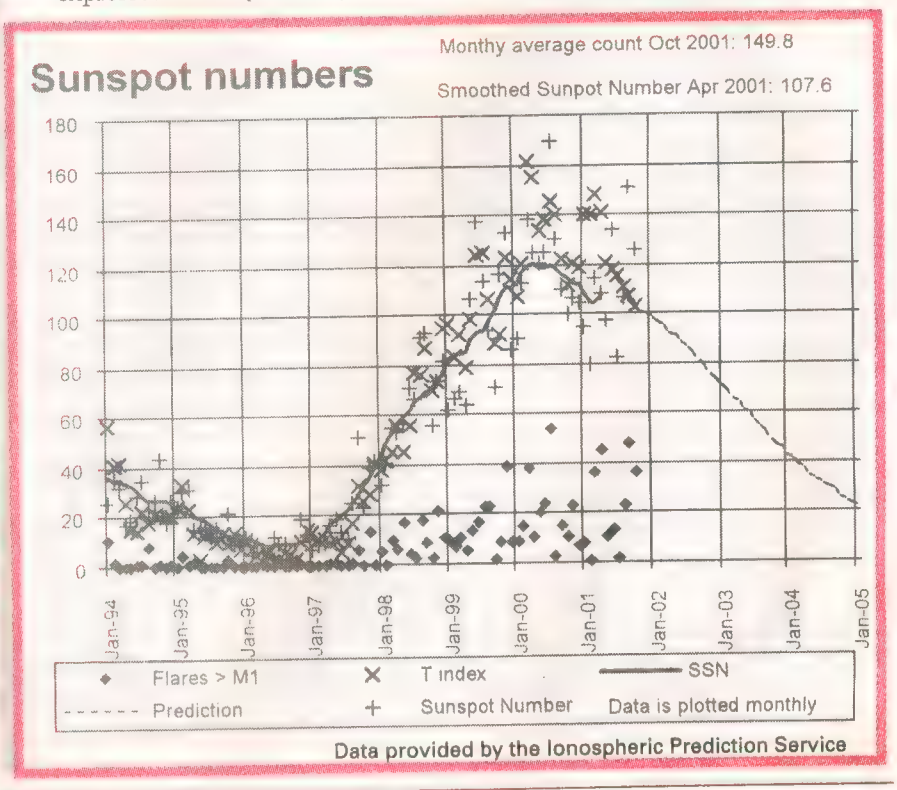

Noise Reducing Aerial

Gil Sones VKAUI
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Box Hill South VIC 3128

Some interesting information regarding a noise reducing antenna was forwarded by Merv VK4DV. The information had originally been sent to Merv by the late Joe Reed VK2JR who passed away around 30 years ago.

The basic idea is that vertically polarised noise signals can be induced in an unbalanced feed line and coupled into the receiver along with the desired signals. The antenna dipole is horizontally polarised and is up high enough and oriented to minimise pickup of noise signals. However, the use of a coaxial feedline, and the resulting unbalance, may allow longitudinal signals picked up on the feedline to enter the receiver input and adversely affect the received signal to noise ratio. These signals may well have a large noise component.

Some improvement can be obtained by using a balanced feedline with a balun transformer at the receiver input (see Fig 1). The unbalanced longitudinal vertically polarised noise pickup signals cancel in the balun and the balanced horizontally polarised signals from the antenna pass without attenuation. Further improvement can be obtained by using a screened balanced feedline with a balun transformer at the receiver input. As the screened balanced line impedance may be different to the receiver input impedance and the antenna impedance, a balanced matching transformer may be required at the antenna feed-point and a balun and matching transformer at the receiver input (see Fig 2). High SWR should be avoided as it may exacerbate coupling between the unbalanced vertical component induced in the feed line and the balanced signal component from the antenna.

Thirty or more years ago a screened balanced 90 ohm impedance line was available locally and the information

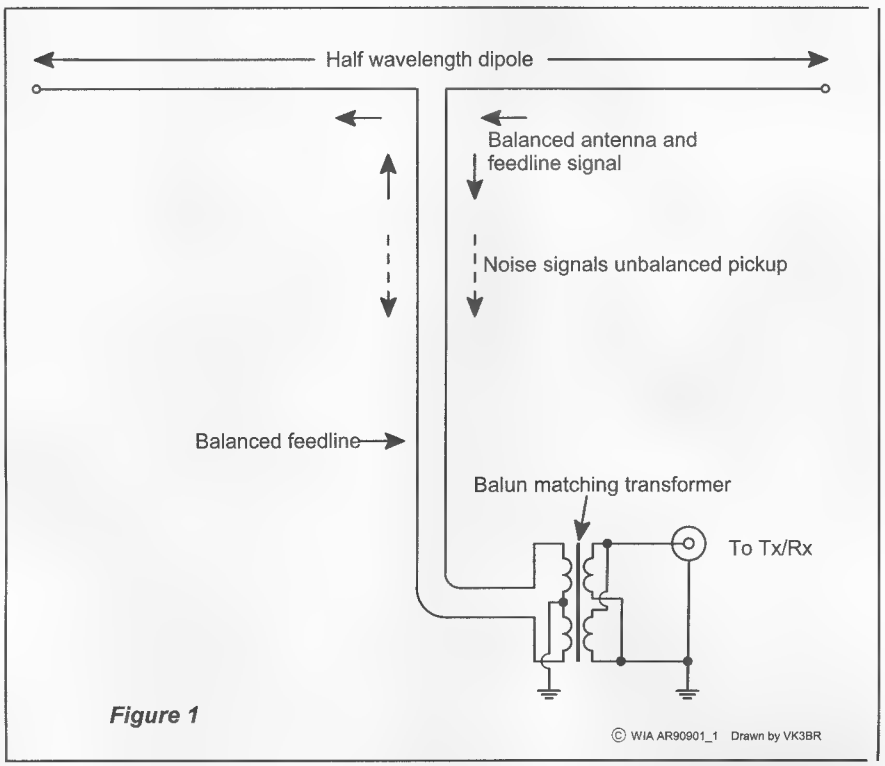


Fig 1 - Balanced antenna and feedline. A properly constructed balun attenuates the longitudinal transfer of vertically polarised noise. Horizontally polarised antenna signals add. Vertically polarised noise-pickup signals cancel.

Merv obtained from the late Joe Reed used this line with a purpose-built combined impedance matching and balun transformer. The screen was left floating at the antenna end and separately earthed at the end closest to the receiver. This earthing to a separate earth, and not to the same station earth as the receiver, was important in separating the noise from the signal from the antenna.

While suitable matching balanced transformers were described, they were designed for the 90 ohm feedline and are not reproduced here. For those wishing to experiment there are many designs which have been produced recently which could be used. The ARRL publication *Transmission Line Transformers* by Jerry Sevick W2FMI would be a good place to look. There have also been a number of articles by

HARG Hamfest — 24 February 2002

Healesville Amateur Radio Group Inc. will be holding their annual **HAMFEST** on the **24th February 2002** the venue will be the usual place, **The Healesville Memorial Hall, Maroondah Highway, Healesville.**
To book a table please phone, either Gavin on **03 5968 8482** or Carol on **03 5962 6098**
See you there!

the same author, and others, which have been reproduced in a number of publications. The main thing is to match the antenna to the feedline, and the feedline to the radio, whilst maintaining balance in the feedline and antenna system.

The feedline may be a problem but even a good unscreened balanced line should give some benefit. There are some balanced screened lines, such as TwinAx, which have been used for data and which may be useable. You would need to establish the impedance of the line and make transformers to suit.

A similar receive-only system was marketed between 30 and 50 years ago for broadcast reception. This system used balanced matching transformers at each end of the balanced feedline. The feedline used was probably similar to the 90 ohm screened balanced line. This system was used to allow the receiver feedline to pass through electrically noisy areas between an antenna mounted in the clear and the receiver. This was before the days of internally mounted ferrite antennas in broadcast radios. Many radios were also used to receive short-wave broadcasting in areas with only limited or poor medium wave broadcasts.

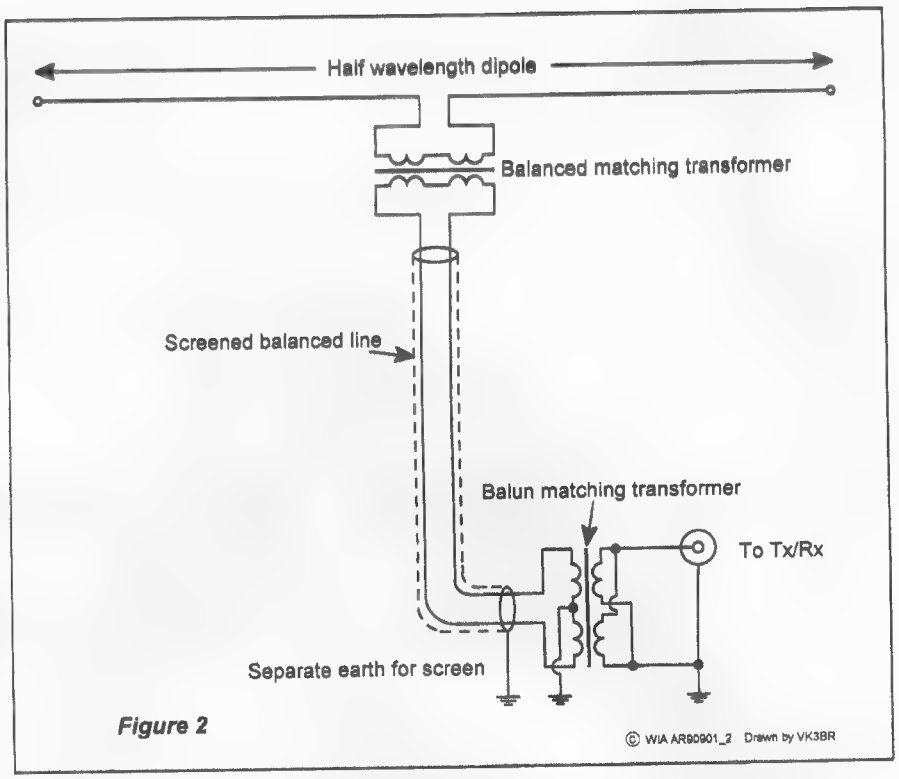


Fig 2. Balanced antenna with matching transformers and screened balanced feedline.

Club News

The Clubs' Convention In VK5

Over the first weekend of November a Clubs Convention was held in Adelaide. Over 20 delegates attended and at least 20 radio clubs were represented.

Topics discussed included Repeaters, changes to the band plans, and fees but the one that gave the most food for thought was

"Just who DO you contact in an emergency?"

If you heard a strange voice with an unrecognisable or no callsign calling within an amateur band with an emergency message what would you do?

By the regulations you should answer it but then what do you do if you are told that a major emergency has occurred in a remote place and that you are the first person to answer the call?

Do you ring 000?

Do you call your local politician?

Do you contact the SES?

Do you call an ambulance?

And when you do find someone to listen to you how do you convince them it is a real emergency?

Although we are a service that prides itself on being ready to help in an emergency whenever we are called upon to do so (as so many US amateurs did immediately after the September 11th attack) do we know what to do if we are the first person to hear of the emergency?

Something to think about!

More Club News on page27

Ross Hull Memorial VHF/UHF Contest

December 26 2001 to January 13 2002

How about working a few stations on VHF/UHF and putting in a log ?

See Contest Page 38.

ALARA

Christine Taylor VK5CTY
VK5CTY@VK5TTY or geencee@picknowl.com.au

Planning ahead

There are two important meetings next year in the world of YL radio

In June there will be an International MEET in Palermo on the beautiful island of Sicily in the Mediterranean. If it is as interesting as the YL2000 in Hamilton there will be much renewing of friendships and happiness. The web address is

http:l/www.qsl.net/yl2002

The venue will be the "Mondello", Hotel Splendid La Torre, which is located in the beautiful gulf of Mondello, just a short bus ride from the centre of the town.

Ruth IT9ESZ is the co-ordinator of the meet. Her email address is

buscemi@skyol.it

ALARAMEET 2002 in Murray Bridge

Plans are well ahead for the 2002 ALARAMEET over the long weekend at the end of September. The website for this event is

http://alarameet2002.8m.com

There you will find all the information you need. The details are also in the October ALARA Newsletter.

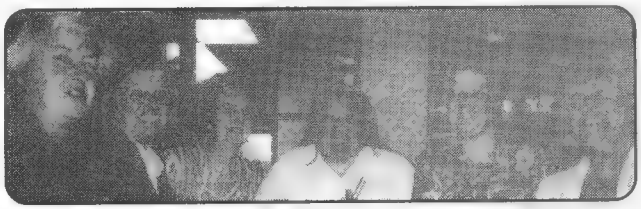
There are several caravan parks. The "Avoca Dell", the "Long Island" and the "Princes Highway" are all large parks while the "Oval Caravan Park" is smaller. All the parks have cabins for families or for groups and there is a motel next door to the "Oval" park.

There are several other motels, the "Olympic Pool", the "Murray Bridge Motor Inn" and "Greenacres". Among others. The "Bridgeport Hotel" has both single and double rooms with or without en-suite facilities.

The centre of activities will be the "Boat Shed" Community Centre right beside the river and many outings are planned. ALARAMEETS are not business meetings; they are an opportunity to meet and talk and enjoy each other's company. Please come along.

If you are not a member of ALARA or not a licensed amateur, that is not a worry, come along and meet the other YLs. You may bring your OM, too. They enjoy meeting and talking as much as we do.

Watch this space for further updates but keep that weekend free.



Lunchtime meetings

At "Berties Pancake Parlour" in October there were six YLs. Because it was school holidays Tina VK5TMC was able to join us and, for the first time Sue, XYL of Steve VK5AIM, long time participant in ALARA, came too. Sue has allowed her membership to lapse recently so she was given a new application form which she filled in on the spot. It is called striking while the iron is hot.

Please remember that both VK3 and VK5 have luncheon meetings on the second Friday of the month. In VK6 the lunches are held on the third Friday. Do get in touch with a local member and join the ladies. Regular faces are great but visitors are also great.

Overseas visitors

Maxie DJ4YL and her sister Marile are in Australia again. They love it here and always plan very interesting trips for themselves and visit all the friends they have in VK. This time they also went to New Zealand for a week or so, their first visit across the water.

It was clever of Maxie and Marile to arrange to come from Melbourne to Adelaide along the Great Ocean Road. They were on their own with just the guide so they could stop and have a good look at the places they found most interesting. They have been up to the Flinders Ranges since arriving in VK5 and as usual they chose to get there by a normal bus service so they did not have to do the usual tourist things. They are very independent and enterprising tourists.

Whenever they can they say "Hello" to their YL friends. In Sydney they contacted Dot VK2DB and subsequently spent a day with Dot and OM John at Taronga Park Zoo. The photo shows the lovely views over the harbour you can get from that vantage point.

Another interesting word item from BYLARA

A New English Language

The European Commission has just announced an agreement whereby English will be the official language of the EU rather than German which was the other possibility. As part of the negotiations, Her Majesty's Government conceded that English spelling had some room for improvement and has accepted a 5-year phase in plan that would be known as 'Euro-English'.

In the first year, 's' will replace the soft 'c'. Sertainly, this will make the sivil

servants jump with joy. The hard 'c' will be dropped in favour of the 'k'. This should klear up konfusion and keyboards kan have I less letter.

There will be growing publik enthusiasm in the sekond year, when the troublesome 'ph' will be replaced with 'f'. This will make words like "fotograf' 20% shorter.

In the 3rd year, publik akseptanse of the new spelling kan be ekspekted to reach the stage where more komplicated changes are possible. Governments will enkourage the removal of double letters, which have always ben a deterent to akurate speling.

Also, al wil agre that the horible mes of the silent 'e's in the language is disgraseful, and they should go away. By the fourth year, peopl wil be reseptiv to steps such as replasing 'th' with 'z' and 'w' with 'v'. During ze fifz year, ze unesesary 'o' kan be dropd from vords kontaining 'ou' and similar changes vud of kors be aplid to ozer kombinations of leters.

After zis fifz yer, ve vil hav a reli sinsibi riten styl. Zer vil be no mor trubl or difikultis and evrivun vil find it ezi to understand ech ozer. Ze drem vil finali kim tru!

33 Rita

Christmas Greetings

HAPPY CHRISTMAS and HAVE A GREAT NEW YEAR. I hope all your antennas send messages further than ever before and they all come back with bells on.

AT

Club News

Adelaide Hills Amateur Radio Society

The October meeting was one of the most interesting and innovative meetings for a long time. Graham VK5ZLZ conducted a construction event. Members had been told to bring along their soldering irons and construction tools. Graham brought a number of bags and boxes of components and gave out a list of the parts needed to make a QRP FM transmitter for the 80-metre band. Members had to select the components and assemble the kit.

Rarely has there been such concentration. Every head was bent over the table, every eye was focussed. The only interruptions were the calls for the "Supa Glue". Some of the little rectangles of aluminium had to be glued in place and the IC had to be glued Right Way Up (one or two finished up wrong way up instead).

Graham had brought along a skeleton key and an FM receiver tuned to the 80-metre band and EVERY set tuned up somewhere within the band. One or two had to go back to the manufacturer for a rerun but they all finished up working.

Great was the feeling of satisfaction!!

News from the Moorabbin & District Radio Club

MDRC meets for Christmas

Members and friends of the MDRC are invited to the MDRC's Christmas social function. It will start at 8pm on Friday December 7. The venue will be the Combined Club Rooms, Turner Rd, Highett. Free food and soft drink will be provided.

More hands make light work

The MDRC is pleased to welcome Mal Maher (SWL) to its committee. We now have a full committee though we still need a volunteer to step forward as Treasurer.

Net now monitoring UHF CB

With the end of daylight saving, the weekly MDRC net has reverted to being two metres only. However our net control Tony VK3CAT and others also monitor UHF CB Channel 12 during the net. So if you have UHF CB, give us a call. The MDRC net operates each Monday at 7:30pm on 146.550 MHz.

APC News Christmas/New Year arrangements

The last APC News for 2001 will go to air on Wednesday December 19. APC News will enter its fourth year on Wednesday January 9, after a two week break.

Still on news matters, we are pleased to welcome David VK3ASE to our 160 metre relay team. David's potent AM signal on 1843 kHz has been heard as far away as NSW's south coast.

Items for inclusion in APC News can be sent to keith@lcd.net.au or parkerp@alphalink.com.au . If you wish to contact the news team on the air, try calling on 146.550 MHz or 53.900 MHz VK3RMS repeater.

The Moorabbin & District Radio Club wishes members and friends a merry Christmas and a joyous and safe new year

Peter Parker VK3YE, Publicity Officer
Moorabbin & District Radio Club
parkerp@alphalink.com.au (03) 9569 6751

SCOOP PURCHASE!

All-mode operation on the HF, 6m, 2m, and 70cm bands with full satellite capability...

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Ready for action on SSB, CW, AM, FM and digital modes, the FT-847's compact size makes it ideal for a variety of portable/mobile applications as well as for serious base station operation. You get a solid 100W output on the HF and 6m bands, 50W output on both 2m and 70cm, dual fan cooling and a rugged diecast chassis. Plus, the ultra-quiet HEMT receive pre-amp on 2m and 70cm contributes to the FT-847's amazing sensitivity figures. Advanced Digital Signal Processing (DSP) circuitry enhances received signal/noise ratio for easier copy of signals under marginal conditions through the use of 16 selectable noise reduction algorithms, while the Bandpass and Auto-notch filters aid the IF based Shift and Noise Blanker circuits in reducing interference on crowded bands.

The FT-847 is ready for satellite operation, with crossband full duplex operation, normal and inverted VFO tracking of the satellite uplink/downlink, as well as 12 special satellite memories with alpha-numeric tags. Also provided is a low-noise Direct Digital Synthesiser (DDS) that provides tuning steps as small as 0.1Hz, plus there's an adjustable DSP bandpass filter as narrow as 25Hz for exceptional weak-signal CW performance. You can also install optional Collins® mechanical filters in both the transmit and receive chain for enhanced SSB operation, as well as a 500Hz Collins® filter in the receiver side for CW. An effective speech processor with adjustable frequency shift voice tailoring is also provided to add punch to your SSB transmissions. The FT-847 is ready for data modes, with a rear panel Data In/Out socket and a packet socket for 1200/9600 baud VHF/UHF operation. Other features include extended receive operation (36-76, 108-174, and 420-512MHz), a high-speed computer control interface, 10-key keypad for band/frequency entry, and a shuttle-jog tuning ring for fast QSY. Also included are encode/decode CTCSS and DCS operation, selectable channelised steps for FM operation, FM narrow/wide modes for 29MHz use, and a large LCD screen with adjustable backlighting.

Each transceiver is supplied with a hand-mic, DC power lead and a comprehensive instruction manual. Call us for a copy of Yaesu's 6 page colour brochure to learn more about this incredible value 'Earth Station' transceiver.

D 3425

2 Year Warranty

YAESU

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SAVE $441

Offer expires 30/12/01

DICK SMITH ELECTRONICS

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SOLID PERFORMANCE!

VX-5R pictured showing large frequency digits

VX-5R 6m/2m/70cm Deluxe Handheld

Tiny, yet incredibly rugged, the VX-5R provides 6m, 2m and 70cm amateur band operation with 5W output as standard (4.5W on 70cm), made possible by a unique PA design, super high-capacity 7.2V 1100mA/H Lithium-ion battery, and a diecast metal case. Plus, ultra-wide VHF and UHF as well as medium-wave* and shortwave reception facilities are provided.

Another really useful feature is the large backlit dot-matrix LCD screen that can be configured to suit your operating needs. You can choose large frequency digits, dual line displays (VFO 'A' and 'B' frequencies, VFO 'A' frequency and battery voltage and even VFO 'A' frequency as well as other data such as recent Tx/Rx times or transceiver internal temperature), or even 8-digit alpha-numeric memory labels. All this in a diecast aluminium enclosure just 58W x 87H x 28D mm (w/o knobs or antenna)!

Other features include:

- Tx: 50-54, 144-148, 430-450MHz
- Rx: 0.5-1.8MHz, 1.8-16MHz, 48-729MHz, 800-999MHz (cellular blocked)
- Full feature keypad, CTCSS encode/decode, Digital Code Squelch
- Comprehensive menu system
- Over 200 regular memories, plus 10 pairs of 'Band limit' memories
- Fast battery charging from the supplied AC adaptor
- 5 battery saving systems, plus Tx/Rx usage monitor.
- Spectra-Scope™ for monitoring adjacent channel activity
- Comes with FNB-58LI 1100mA/H Lithium-ion battery, flexible antenna and AC adaptor/charger

D 3670

*10kHz steps only.

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Yaesu transceivers and accessories stocked in selected Australian stores only. Other Australian stores can place orders on a deposit-paid basis. Offers expire 30/12/2001. All prices shown are in Australian dollars and are inclusive of GST.

3572D DPS spot col

Division Directory

The Amateur Radio Service exists for the purpose of self training, intercommunication and technical investigation. It is carried out by amateurs who are duly authorised people interested in radio technique solely with a personal aim and without pecuniary interest.

The Wireless Institute of Australia represents the interests of all radio amateurs throughout Australia. National representation is handled by the executive office under council direction. There is one councillor for each of the seven Divisions. This directory lists all the Divisional offices, broadcast schedules and subscription rates. All enquiries should be directed to your local Division.

VK1 Division Australian Capital Territory,
GPO Box 600, Canberra ACT 2601

President	Gilbert Hughes	VK1GH
Secretary	Peter Kloppenburg	VK1CPK
Treasurer	Linden S Orr	VK1LSO

VK2 Division New South Wales
109 Wigram St, Parramatta NSW
(PO Box 432, Harris Park, 2150)
(Office hours Mon-Fri 1100-1400)
Phone 02 9689 2417
Web: *http://www.ozemail.com.au/~vk2wi*
Freecall 1800 817 644
e-mail: *vk2wi@ozemail.com.au*
Fax 02 9633 1525

President	Terry Davies	VK2KDK
Secretary	Pat Leeper	VK2JPA
Treasurer	Chris Minahan	VK2EJ

VK3 Division Victoria
40G Victory Boulevard Ashburton VIC 3147
(Office hours Tue 10.00 -2.30)
Phone 03 9885 9261
Web: *http://www.wiavic.org.au*
Fax 03 9885 9298
e-mail: *wiavic@wiavic.org.au*

President	Jim Linton	VK3PC
Secretary	John Brown	VK3JJB
Treasurer	Barry Wilton	VK3XV

VK4 Division Queensland
PO Box 199, Wavell Heights, Qld. 4012
Phone 07 3221 9377
e-mail: *office@wiaq.powerup.com.au*
Fax 07 3266 4929
Web: *http://www.wia.org.au/vk4*

President	Bill Riis	VK4YCU
Secretary	Bruce Jones	VK4EHT
Treasurer	Bill McDermott	VK4AZM
Office Mgr	John Stevens	VK4AFS

VK5 Division South Australia and Northern Territory
(GPO Box 1234 Adelaide SA 5001)
Phone 0403 368 066
web:*http://www.sant.wia.org.au*
email: *peter.reichelt@bigpond.com*

President	David Minchin	VK5KK
Secretary	Peter Reichelt	VK5APR
Treasurer	Trevor Quick	VK5ATQ

VK6 Division Western Australia
PO Box 10 West Perth WA 6872
Phone 08 9351 8873
Web: *http://www.vk6wia.org*
e-mail: *vk6wia@iinet.net.au*

President	Neil Penfold	VK6NE
Secretary	Christine Bastin	VK6ZLZ
Treasurer	Bruce Hedland-Thomas	VK6OO

VK7 Division Tasmania
PO Box 371 Hobart TAS 7001
Phone 03 6234 3553 (BH)
Web: *http://www.tased.edu.au/tasonline/vk7wia*
also through *http:/www.wis.org.au/vk7*
email: *batesjw@netspace.net.au*

President	Phil Corby	VK7ZAX
Secretary	John Bates	VK7RT
Treasurer	John Bates	VK7RT

Broadcast schedules

All frequencies MHz. All times are local.

VK1WI: 3.590 LSB, 146.950 FM each Thursday evening from 8.00pm local time. The broadcast text is available on packet, on Internet *aus.radio.amateur.misc* news group, and on the VK1 Home Page http://www.vk1.wia.ampr.org

Annual Membership Fees. Full $77.00 Pensioner or student $70.00. Without *Amateur Radio* $48.00

From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday at 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup *aus.radio.amateur.misc*, and on packet radio.

Annual Membership Fees. Full $78.00 Pensioner or student $61.00. Without *Amateur Radio* $47.00

VK3BWI broadcasts on the 1st Sunday of the month at 20.00hrs Primary frequencies, 3.615 DSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3ZWI on Victorian packet BBS and WIA VIC Web Site.

Annual Membership Fees. Full $78.00 Pensioner or student $61.00. Without *Amateur Radio* $47.00

VK4WIA broadcasts on 1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 10.135 MHz SSB, 14.342 MHz SSB, 21.175 MHz SSB, 28.400 MHz SSB, 29.660 MHz FM (rptr), 147.000 MHz, and 438.525 MHz (in the Brisbane region, and on regional VHF/UHF repeaters) at 0900 hrs K every Sunday morning. QNEWS is repeated Monday evenings, at 19.30 hrs K, on 3.605 MHz SSB and 147.000 MHz FM. On Sunday evenings, at 18.45 hrs K on 3.605SSB and 147.000 FM, a repeat of the previous week's edition of QNEWS is broadcast. Broadcast news in text form on packet is available under WIAQ@VKNET. QNEWS Text and real audio files available from the web site

Annual Membership Fees. Full $83.00 Pensioner or student $71.00. Without *Amateur Radio* $52.00

VK5WI: 1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.800 FM Mildura, 146.900 FM South East, 146.925 FM Central North, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. The repeat of the broadcast occurs Monday Nights at 1930hrs on 3585kHz and 146.675 MHz FM. The broadcast is available in 'Realaudio' format from the website at www.sant.wia.org.au Broadcast Page area.

Annual Membership Fees. Full $82.00 Pensioner or student $68.00. Without *Amateur Radio* $54.00

VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz, Country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton, 146.900 (R) Mt William (Bunbury).147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900,147.000, 147.200, 147.250 and 147.350 MHz..Also in "Real Audio" format from the VK6 WIA website

Annual Membership Fees. Full $67.00 Pensioner or student $61.00. Without *Amateur Radio* $36.00

VK7WI: 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.

Annual Membership Fees. Full $85.00 Pensioner or student $72.00. Without *Amateur Radio* $52.00

VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).

VK1 Notes

Forward Bias

Peter Kloppenburg VK1CPK

The guest speaker at the October General Meeting was Peter Westerhof (VK1NPW). One aspect of Amateur Radio that Peter is heavily involved in, is Automatic Position Reporting System (APRS). He demonstrated by means of a computer driven projector and an actual operating assortment of a hand-held, a black box, and a few cables how the system works and what benefits you get from having such a set-up. The system is based on a network of nodes comprising digipeaters and/or home station transceivers. These nodes contain maps of their surrounding area in memory, and are used to calculate distances between nodes, and a particular target. The result of the calculations is shown on the screen as a map, or in tabular form. Provided the target is equipped with a variety of sensors, the screen will show items such as its position on the map, speed, height, direction, and time to destination. It was very impressive because he showed that not only amateurs are using this system, but also scientists and others who have a need for remote sensors in the field. Peter has established a node at his home in Canberra, and Derek Holyoake (VK2DRK) in Queanbeyan, also has a node at his home.

By the time you read this, an ACT DX Group has been formed. The group was formed by confreres Mike Jenkins (VK1MJ), Graham Trainor (VK1GT), Tex Ihasz (VK1TX), and Olaf Moon (VK1JDX). The purpose of the group is to encourage more amateurs within the ACT to become active on HF-DX; both through Divisional activities and through the DX group supporting and helping each other improve their DXing operations and skills. The group would be a special interest group within the ACT Division. All enquiries to any of the above.

The next General Meeting will be held on January 28, 2002 in the Scout Hall, Longerenong Street, Farrer. Cheers

VK3 Notes

By Peter Mill VK3APO
WIA Victoria web site: www.wiavic.org.au
email: wiavic@wiavic.org.au

Holiday arrangements and 2002

The last day the WIA Victoria Office will be open for the year is Tuesday 18 December, closing at 1.00 pm (to allow the office volunteer to have a Christmas break-up lunch). The Office will reopen on Tuesday 5 February 2002.

During the closure applications for membership and similar incoming mail will be processed. Apart from the Christmas, Boxing Day and New Year holidays, and the week in between them, urgent email will also be handled.

Delays can be expected however in relation to changes to the WIA Victoria website and its related membership services. During the office closure the accounts of the organisation will undergo their annual audit in line with corporate requirements.

The WIA Victoria Annual General Meeting will be held on Wednesday, 29 May 2002. A formal notice and reports will be sent to members advising them of the AGM and the closing date of notices of motion.

President announces retirement

The President, Jim Linton VK3PC, has announced that he will retire from that position at the Annual General Meeting on 29 May 2002.

Jim, a Life Member of the Institute, has served the membership and the hobby extremely well during a period of enormous change over the past 20 years.

His decision to announce retirement at this time gives the council six months notice so a successor can be considered well in advance of the AGM, and allow the new President a full year in office before the next three year council term.

At the time of the AGM, the council should be at, or near, its full strength of eight, giving it a full year in which to implement changes that it decides for WIA Victoria. In the role of Immediate Past President, Jim VK3PC will be available to provide advice to the 2002-2003 council.

Membership subscriptions

New subscription rates will apply from 1 January 2002. These are higher than 2001 due mainly to a $5 increase in the federal component.

Grade	New subscription
F-Full	$83
A-Associate	$83
G-Pensioner	$67
X-No AR	$51

VK4 Notes - Qnews

From Alistair Elrick VK4MV

15th North Queensland Amateur Radio Convention Co-ordinators Report

The convention was officially opened at the Friday Night Greetings and Nibblies evening by Evelyn Bahr VK4EQ. Evelyn's opening address included a description of what hams had to go through to get a licence (with graphic detail about her XYM (SK) Charlie VK4BQ's application for a licence during World War 2 plus the previous essay format of the radio exams). Registration Co-ordinator Ian VK4ZT showed his experience with past conventions by heaps of forward planning, which made Convention Registration totally painless and very swift. You rocked on up to the TARCinc van and were pointed to an adjoining table where sample bags were conveniently stacked. You looked for your callsign and grabbed your goodies bag which had your meal tickets and auction card. The bags also contained lots of interesting stuff from the WIAQ, Dick Smiths, Sheraton Casino plus a special convention edition of the magazine of renown, Backscatter.

Ladies Handicraft Activity Co-ordinator Sheila VK4PAL took over the University Hall Junior Common Room to participate in a folk art handicrafts session. ARDF Demo Co-ordinator VK4MC Don, arranged for some world-class ARDF beacons to be laid in secret locations around the University and then unleashed a very keen group of RadioSport veterans and newbies!!

Lecture 1: Professor Mal Heron Radiowave Propagation through Partially Ionised Plasma - Bushfires, Cyclones, Squalls and Willywillies. This lecture and has been videotaped for a future showing on the Townsville ATV Repeater. Home Brew Contest - Technical Judges were Gerry Millward and Kevin Smith, of the Australian Communications Authority.

Lecture 2 saw Leonie Tarnawski and Gerry Millward, ACA with an introduction to the Australian EMR Framework. The After-Banquet Talk Gerry Millward VK4HT held the diners spellbound as he detailed a few of the behind-the-scenes happenings the ACA had to deal with during the Sydney Olympics. Did you know that .... - a number of cameras brought in by overseas photographers contained RF remote controls for shutter control and caused interference to the telemetric control of the Cauldron? - a crane remote control on Sydney's North Shore area interfered with the Swiss Timing until its frequency was re-assigned?

The Ken Robertson VK4KT Memorial Award, which rewards and promotes technical excellence in amateur radio throughout North and Far North Queensland, was awarded to Don Terrace VK4MC. WIA Public Forum, WIAQ Vice President and Northern Region Council Member Gavin VK4ZZ introduced WIA Director Don Wilschefski VK4BY and WIAQ Secretary Bruce Jones VK4EHT to those attending. Don concentrated on Federal matters while Bruce gave insight on the working of the State body.

(Sourced from the complete works of Gavin Reibelt VK4ZZ NQ Convention Co-ordinator 2001)

Merry Christmas To All
Christmas Greetings to all readers from the Editor, the Publications Committee and the Directors

QNEWS... The halfway point.

As an insight to how Qnews spreads to all quarters this from Co-ordinator Graham VK4BB, as a report to WIAQ Council.

From the 26 Broadcasts this WIAQ Council Year 2001, there were 20069 all-modes checkins, 6969 RF Audio checkins. There were also 5624 connects to the web site at http: // www. wia. org. au/vk4. 331 emailed copies of QNEWS each week. Interestingly the figures include these: CB retransmission checkins, 410 in VK2, 62 in VK4, 38 in VK7. So there are many taking the time to actually let us know they are listening, plus those we hear do listen but don't check back.

Gold Coast Amateur Radio Society

The GCARS recently conducted a Cram Course to prepare candidates to sit for their licence; 23 took the course over 3 Sundays and followed up with exams over the next 2 weekends with the result of provisional marking by examiners some 2 thirds have gained a pass. This has of course to be made official by WIA Exam service.

Of the regular yearly class of 14, this course has concluded and all are at present involved in sitting exams over the next 2-3 weeks. GOLD COAST CLUB thanks Ron Bertrand and Kath and Roy Cotterill for the many hours of tutoring and involvement in preparing lessons and examining for the end results. Many new members have been gained both from the regular classes and from the Cram Course, which turned out to be a huge success.

Hi Speed on Sunshine Coast

Len VK4ALF has been experimenting with 2.4 GHz radio LAN cards for high-speed data transfer and connectivity to the BBS and packet network. These cards are available commercially and with a small manipulation to the software can be set to transmit solely in our 2.4 GHz amateur band. With an 8 dB collinear at about 7 metres above ground and a 11.7 dB panel mount antenna exhibiting a radiation pattern of about 120 deg on the dash in the car, connections were made up over 4.5 km. The most exciting thing was the fact of file transfers of half a meg in 10 seconds!

That's it for 2001, Merry Christmas and Happy New Year!

73's from Alistair

Bill Magnusson VK3JT

New Zealand walking party tracked using PCsat

One of the prime design functions of PCsat was demonstrated locally during the latter part of October 2001. It concerned a party of walkers in New Zealand. Alan ZL2VAL takes up the story.

"The "walkers" were a group of retired folk, walking the length of New Zealand. They set out from the top of the North Island, Cape Reinga, on August 11 and were targeted to reach the bottom of the South Island, Bluff, some 1200 miles later on November 1st. The projected number of days on the road was 72 actual walking days, about 30km each, with 8 rest days along the way. The purpose of the trek, was to prove that "You aren't over the hill when you're over 65". There were 11 people in the group, oldest 74, youngest about 50. One member of the party, Tony, G3RKL traveled to New Zealand from Sheffield in England to take part and took out a special license and callsign of ZL6RTB, for "Reinga-To-Bluff". Tony used a Kenwood TH-D7 handheld radio, coupled to a GPS receiver. He transmitted APRS beacons every 10 minutes, through the New Zealand 70cm National System of linked repeaters. Several ZL operators monitored the progress of the walkers with UI-View and some digipeated the beacons onto local packet and APRS frequencies. I digipeated their positions through PCsat and the ISS, as APRS objects. Unfortunately the chain of repeaters ran out at Dunedin and the troops were then too far away from the last one for any more direct beacons. Cheers, Alan. (ZL2VAL)...."

You aren't over the hill when you're over 65!

Using my copy of UIview32, I followed the progress of the "walkers" via PCsat. From an observer's point of view the exercise ran very smoothly with a new position being indicated each day during the late afternoon passes of PCsat which were in a good position for both New Zealand and Australia.

The exercise vividly demonstrated the effectiveness of the APRS system when used in conjunction with a suitable amateur radio satellite, in this case PCsat and a suitable portable packet radio station. In this case the Kenwood TH-D7 radio was used. It has integrated packet radio capability. One of the really nice things about this system is that the very short transmissions made mean that the battery life of a portable transceiver is quite long. The beacon transmissions only draw power for milliseconds each time. The system can be set to transmit every 5 to 10 minutes or so all the time a party or individual is in transit and under these conditions a set of batteries can be expected to last the duration of the exercise.

Many such demonstrations have been conducted already around the world using PCsat. They range from hikers to joggers to marathon runners and motor car rallies. The applications seem endless. Our own Murray River Canoe Marathon would seem to be an ideal exercise for this medium. How the technology has changed in a decade or so. The whole 'walkers' episode reminded me vividly of the Russian / Canadian "Trans-Polar Ski Expedition" back in 1988. A group of my 6th form students tracked the ski party from Cape Archtichesky in northern Russia across the North Pole to Elsmere Island in northern Canada. The technology was quite different in those days but the principle was similar. Their daily progress was monitored by having them activate a small rucksack beacon transmitter. The signal was picked up by very early satellite positioning equipment, the forerunner of today's GPSs and EPIRBs and relayed to Surrey University where the details were uploaded to the digitalker (voice synthesiser) on board the Uosat-Oscar-11 satellite. By listening to the digitalker on a simple hand held 2-metre receiver, the skiers were able to plot their own progress on their charts. So were we! We followed their progress by placing stickpins on a map of the North Polar Region. Crude as it was, it was still possible to see detail such as where they had to deviate from their planned course because of difficult ice conditions on a couple of occasions.

How much easier that exercise would be today. The experience of the New Zealand walkers and PCsat has amply demonstrated that this technology is within the grasp of the amateur satellite fraternity. Congratulations must go to Bob Bruninga WA4APR and his group of Midshipmen at the US Naval Academy for the outstanding success of the PCsat project.... (and to the Senior Citizen walkers of course).

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. No formal application is necessary for membership and no membership fees apply. Graham maintains an email mailing list for breaking news and such things as software releases. Members use the AMSAT-Australia HF net as a forum.

AMSAT-Australia HF net

The net meets formally on the second Sunday evening of the month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000UTC with early check-ins at 0945UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900UTC with early check-ins at 0845UTC. All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK,
GPO Box 2141,
Adelaide, SA. 5001.

Graham's email address is:
vk5agr@amsat.org

AO-40 News

Time flies when you're having fun. It's six months now since AO-40's transponders were opened for general use on an experimental basis. During that time it's been interesting to watch the discussions on the AMSAT bulletin board. The downlink is operating on 2.4 GHz and at first this was viewed as being for "gurus only". AO-40 is not the first amateur radio satellite to carry 2.4 GHz gear. For many of us it was simply a matter of digging out the equipment we used for AO-13 and Arsene mode-S.

The learning curve must have been very steep for a lot of newcomers but it has been gratifying to see the way information has flowed so freely. There is no lack of expertise on the BB. Although many of the 'newbie' questions must have sorely taxed the patience of the 'Elmers', every question was subsequently fielded in a patient and competent way. Most of the common problems stemmed from new users not realising how weak the downlink signals are, how careful you have to be in setting up the first RF circuits in the receive chain and just how important the antennas and feedlines are in the whole story. None of these things are new of course and apply to all amateur radio operation, but people either forget basic principles or simply don't attach sufficient importance to them. Then they wonder why things just don't work. Most of the problems arose because people forgot or paid scant attention to the simplest of RF rules. What you can get away with on HF ... you certainly can't get away with at 2.4GHz.

The basic antenna has to have sufficient gain and the only realistic way to go is a parabolic dish. Lots of folks tried out long yagis and helix arrays and found them lacking. A few even tried to use all-sky antennas like the quadrifilar helix. Of course they didn't work. The vast majority are now using dish antennas. Many new users paid too little attention to the means of 'illuminating' the dish, i.e. the design of the feed antenna. With incorrectly designed feeds, dishes will be either under or over illuminated with a consequent loss of efficiency and degradation of the system noise figure.

Many fell for the trap of running long feedlines to the shack. Even with a good dish antenna this isn't going to work. There'll be no signal left to receive in the shack. A good number thought they were doing the right thing and mounted the downconverter on the dish. This is an improvement but it's still far from optimum. Unless an efficient crystal oven is used the frequency will wobble all over the place due to temperature changes. Little by little people began to realise that there is only one way to do the job ... that is ... do it right in the first place like the 'Elmers' have been saying all along.

So, what is "the right way"? Fortunately amateur radio operators have been delving into the microwave region for years. Oscars have been using 2.4 GHz downlinks for years and usable systems have evolved. There are certain conditions you need to meet. An "Oscar-40 class" station which can be expected to give good results would follow along these lines:

Start with a well constructed fine mesh or solid dish of about 60 – 90 cm and fit it with a helix feed, preferably similar to the G3RUH design. Offset dishes can be used but a prime-focus dish is better. Mount a good low-noise pre-amp right at the helix feed point. NO co-axial cable, just a co-ax adapter to make the connection. The pre-amp should have at least 20dB gain and a noise figure below 1 dB. Paint it with reflective white paint. Use the best co-axial cable you can afford to connect the pre-amp to the downconverter in the shack. Use 9913 or better. You'll be surprised how many of those 20 dB disappear along the way even with good co-ax ... this is 2.4 GHz we are talking about ... not 3.5 MHz. Use brand new connectors and brand new co-ax wherever 2.4 GHz is present. Don't even THINK about using secondhand connectors or cable. The downconverter can contribute a lot of noise to the overall receive system. Most of this will be mixer noise and some is unavoidable but make sure it's not excessive by choosing the best design you can afford.

Many operators will evolve systems that would out-perform the one described above. However, any downward departure from the above and the results will fall off markedly. Think of the above layout as a satisfactory minimum. Don't fall into the trap of thinking, "Oh I'll have a go anyway, I might hear something". You won't. If you aren't prepared to give it your best shot, don't waste your money and above all if you can't hear the satellite, don't blame the satellite or AMSAT or the 'gurus'. They gave it their best shot when they built it. Please give it your best shot when you use it. There is ample help available on the AMSAT web site and via the AMSAT-BB bulletin board. Even with less than optimum squint angles, AO-40 has been producing spectacular results. The good DX is there to be worked every day. Be part of it!

AO-10 Continues to Provide Good DX Contacts

If you haven't listened for a while, now would be a good time to check out AO-10. Reports are coming in daily on the AMSAT-BB of excellent DX contacts being made on the "old flagship". AO-10 has been out of control for some years now due to the failure of the on-board computer. From time to time conditions of solar illumination and satellite attitude are favorable for good communications. Now is such a time.

You will have to dust off the mode-B gear. That is – 70cm up and 2-metres down. Listen around 145.808 MHz for the beacon. It is just an unmodulated carrier since the computer failure. It should be about 5 or 6 "S" units above your noise floor. If it is you can listen for signals up around 145.900 – 145.950 MHz.

To test your uplink, transmit around 435.100 MHz and search for your signal around 145.900 MHz. Remember it is an inverting transponder so transmit on LSB to have a downlink signal on USB. A tracking program like InstantTrack will show you what other areas share your footprint. Have a go, you may be surprised at how well the old bird is still working. Good DX!

Next month, the six-monthly report on operational satellites, their frequencies and modes.

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Have you ever wondered how efficient your cooling fan is ?

Check out General Fan Performance Guide from Ambdmt.com at

http://www.ambdmt.com/article-display.php?

Antenna masts

that won't annoy your neighbours

Don Jackson
VK3DBB
55 Ryan Road
PAKENHAM Vic 3810

Much has been written in the past to technically justify installation of an antenna as high as possible, with the highest gain available and maximum performance, especially with the monster HF antennae used by DXers. But how do we address the concerns about the appearance of such antennae to those unfamiliar with amateur radio?

There are many restrictions on the use of amateur radio, ranging from strict prohibition in the case of some retirement villages, to town planning controls which regulate or restrict the size and height of masts, apart from those physical constraints imposed by the limited dimensions of some residential lots. Yet we have all seen antenna installations which even to another amateur operator, present a poor image and often serve only to raise the temperature of angry neighbours.

Many people do not understand the relationship between efficient antennae and successful enjoyable communication and, let's face it, many couldn't care less! Our neighbours often can't put into so many words what they don't like about amateur radio transmissions, but they can certainly tell us when they are angry and unhappy with what we have erected.

There is nothing fundamentally wrong with trying to create a home environment of which both our neighbours and we can be justifiably proud. Most people want to have some degree of control over the future of the homes they have worked so hard to acquire, and this is all the more reason why we should try to educate our neighbours and community planners. But unfortunately, education may not always be enough.

So the issue is raised about keeping our antenna plans within reasonable bounds. There are several reasons why neighbourhood groups may think our beloved antennae do not belong in residential communities. In fact, in one case with which I am familiar, my local Council was presented with a report on a town planning application that said in effect, that amateur radio is not an appropriate use within a residential area!

Among the reasons (excuses?) that are used by objectors are these:

- They fear that property values will nosedive, and homes will become difficult to sell as the subdivision "disintegrates". This is usually the major objection. (In the event of an appeal though, it can be very strongly argued that this is not a relevant town planning ground of objection).
- To many, antennae (particularly large Yagis) are ugly
- Antennae emit RF energy, which some believe is a potential health hazard.
- They may be afraid of antennae crashing into their homes in the middle of a big storm
- Interference to TVs, radio, telephone, home alarm systems, pacemakers etc.
- In the opinion of most non-amateurs, large antenna farms do not enhance the visual tranquillity many expect from their home settings

Get the picture? Why would anyone ever want to live next door to an active amateur? However, there may well be room for compromise, and here are a few suggestions to constructively address or at least mitigate some of our neighbours' concerns.

- Be realistic in terms of height. Don't plan a 30 metre tower in a treeless residential neighbourhood full of small lots.
- Accept greater challenges by not insisting on having the optimum set of antennae. If QRPers can enjoy radio communications with flea power, we can certainly get by with a more modest array.
- Use good judgement when calculating the number of antennae you feel you can use. Use multi-band devices whenever possible.
- Make sure your antennae appear sound and solid.
- Consider wire antennae. They are much less visible than aluminium tubing.
- Keep antennae away from the sides of narrow blocks where possible.
- Plan installations around building and lot features, especially around the upper parts of houses, trees or the back yard.
- Convince your neighbours that, although you like using radios, you also are interested in preserving the neighbourhood tranquillity and willingly make compromises. Always have a Plan "B".
- Don't surprise people with antenna or mast installations. And NEVER use the word "Tower". It immediately convinces the uninitiated into thinking you are going to put up a structure like a high voltage electricity transmission tower. Instead, consider ways to help neighbours visualise what you are planning to install before beginning work.
- Consider a trial antenna installation. Temporarily put up an antenna for a long weekend and do a contest. Share the results with your neighbours.

The average amateur doesn't like to give offence to his/her neighbour. Most

are responsible, community spirited and hardworking citizens. When thinking of an antenna, consider a modest type such as a dipole or other wire antenna. If you feel you need a larger array, see if you can be happy with a 12 to 14 metre antenna.

In this regard, under present Victorian Town Planning law, a town planning permit is generally not required for any amateur radio mast and antenna: -

- That is not more than 14 metres high
- Where the mast dimensions are not greater than 500mm at any point (excluding antenna) exceeding 3 metres above the ground.
- Where the overall dimension of the antenna is not more than 6 metres. This length of course is less than most Yagis

This is not intended to be legal advice, and the law in other states may vary considerably from Victorian Law.

When developers and town planners consider antenna restrictions, they may have in mind the far end of the spectrum, that is the amateur who wants the most gain, the highest and the biggest antenna with the most elements and widest wingspan. Those in power feel, probably correctly, that homeowners expect them to control and regulate antenna installations, and to keep property values up and maintain beautiful neighbourhoods.

Become involved and keep involved with your neighbours early, rather than whinge after the fact. Consider how you can minimise objections about how antennae look by rethinking you next project. Beware of a "stirrer" who circulates a petition against your proposal.

Finally, if your mast and antenna is such as to require a town-planning permit, keep fully in touch with the person at Council who is dealing with your application. Inspect any objections; sort out those that are reasonable from the unreasonable, make a submission to Council on the objections before the application is submitted for decision. Try to view the report before it is presented to Council to ensure it is a balanced report, and if not, make sure you talk to your local Councillor before the decision is made.

This article has been adapted with permission from one written by James N Woods, W7PUP, and which appeared in the "Op-Ed" section of the June 2001 issue of QST.

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The very PC WIA

PC=Politically Correct, Personal Computer, and...Productivity Commission.

Peter Ellis VK1KEP *explains how the WIA has addressed the future of the Radiocommunications Act and the ACA.*

It was a brilliantly clear Spring day in Canberra on Monday 29th October when the Productivity Commission's two sitting commissioners, Dr David Robertson and Dr Neil Byron, heard submissions from the WIA's President, Ernest Hocking VK1LK and Federal Councillor Gilbert Hughes VK1GH. (Other Amateurs attending were Tony VK1TB and Peter VK1KEP.) But, no one in the small Barton Room in Brassie House, one of Canberra's old rooming houses turned olde worlde hotel, took much notice of the weather.

The WIA was on after the submission from the Australian Maritime Safety Authority (AMSA), and before lunch. Time was, therefore, precious.

The two commissioners had obviously read the WIA's submission. Dr Robertson joked that the two people should perhaps identify themselves with their callsigns when they addressed the tape recorder for the first time. There was nervous laughter, and Ernie and Gilbert duly gave their details including callsigns. Ernie Hocking addressed the commissioners for about 8 minutes, summarising the WIA's submission and stressing various matters.

Commissioner Robertson then asked specifically about regulation of the Amateur Radio service. Gilbert Hughes, formerly a Radio Inspector, stressed the need for regulation in former times, and how modern electronics had negated the need.

After some discussion, Commissioner Byron tried a metaphor: The regulation of hang glider pilots was now in the hands of the Gliding Federation rather than Aviation Safety Authority, and he wondered aloud whether this was like the proposal from the WIA to self-regulate the Amateur Radio service.

What followed was a wide-ranging discussion between the commissioners and the WIA representatives, covering: the proposed Foundation License, how the time pressures on young people tend to preclude their involvement, the disincentive of the fee structure of the ACA versus the cost of equipment, the acceptance in various countries of the social worth of Amateur Radio versus a fee, and the need for recourse to government regulatory oversight no matter what level of self-regulation there might be.

The session finished after about 25 minutes, and the Amateur Radio people had a few minutes to privately discuss matters with the commissioners as they went to lunch. It transpired that Dr Byron is a keen glider pilot and so, with some further explanation of Amateur Radio operation, his metaphor provided him a clear model for understanding the aspirations of Amateur Radio operators.

Find the WIA's and other submissions on the Productivity Commission's web site http://www.pc.gov.au and look under 'Radiocommunication'.

Beyond Our Shores

David A. Pilley VK2AYD
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IHS Needs Operators for Honduras

International Health Services says that it needs ham radio operators to accompany medical and dental teams to villages in Honduras.

According to an Internet posting by John Kirckof, KB0UUP, most of these villages HIS visits have no electricity or phones. Kirckof says that IHS is often the only medical care these local people will ever see.

Kirckof, who is the Communications Director for HIS says the group will provide High Frequency gear for any operator who does not have his or her own portable rig. Both men and women are welcome to apply. Sign-up is now. For more basic information, visit www.ihsofmn.org or contact John by e-mail to jmkkek@runestone.net.

(KB0UUP, ARNewsline(tm) via QNEWS)

Internet Linking

Dr Tony Whitaker

You may recall last year reading in AR the story of Tony Whitaker, G3RKL/VK2STB who walked from Sydney to Brisbane. Well, he's at it again and spent August through October walking the length of New Zealand. Tony, licenced as ZL6RTB, kept in contact with his fellow Amateurs back in the U.K. via the N.Z. national repeater system and Internet linking. Using I-phone and IRLP linking, he was able to keep in touch with his friends through his local home repeater GB3US. Tony also used APRS/GPS to provide location reports. This was shown on the web site www.findu.com. We can't hide from it – Internet linking is part of the evolution of Amateur Radio. After the trek Tony took a few days off to travel up the east cost of VK again, only this time with 4 wheels beneath him. As he passed by my QTH near Port Macquarie, chauffeured by Graham, VK2FA, I was able to stop him on the highway and take a digi-pic. Perhaps we can get Tony to write his new travel venture for us.

Remote Control in the USA

Having just read the article on ZL/G3RKL and his use of the Internet to talk to the U.K. daily, I opened November QST and read the story of Brad Wyatt, K6WR, who uses the Internet to access other Amateur stations that have been specifically set up for remote operation.

Remote control is not something new. It's been around for years and I've worked a few stations that were linked remotely to their transceivers by telephone lines or UHF links. However, they were owner-users. Internet linking is different because you link into somebody else's equipment.

Imagine you want to contact someone in North America on 80 SSB. It's tough directly from VK, however via the Internet you can link into designated stations and remotely control them. So the operator is sitting on some remote DX Atol with his laptop and satellite cell-phone, linked into the Internet, operating a KW out of North America. Now there's a DXCC problem!!

Is it legal? According to the article, the answer is yes! You have to register to use these stations and it appears to abide by the FCC rules.

(QST Nov)

Remote Control in the U.K.

The U.K. is about to start investigating remote controlled HF stations and a Special Research Permit has been given to Dave Gould, G3UEG, to investigate remote control over the telephone network.

The system is based on a Kachina 505DSP transceiver and Kachina's own specially designed remote control system. The audio is digitised and then multiplexed with the control signals. The resulting single data stream is encoded and then passed over the telephone network using standard modems. At the remote end the data is decoded and the audio is split from the control signals and passed to the transceiver. The system will operate at a line speed of 28k or better and includes strong security, failsafe and shutdown measures.

The ability to operate remotely will give many benefits, including the use of more effective antennas where planning restrictions or garden size limit what can be done at home. It could also be used to put antennas away from sources of man-made noise or to get away from EMC problems. This will be the first step on what could become an interesting development. Anyone interested in receiving further information may contact Dave Gould, G3UEG, by e-mail at david.gould@btinternet.com

(RSGB B'cast 3 Nov)

Clockwork Radio

Most of think of Marconi as the father of Amateur Radio, others may refer you to M.J. Dennis who used the call DNX in 1898. At the Institute of Electrical Engineers in the U.K. last month, Ralph Barrett, G2 FQS, gave a lecture and demonstration of the equipment that David Hughes built and demonstrated in 1879. Hughes equipment had a clockwork interrupter that provided pulses of energy from a Daniell cell to make resonance in an inductor coil. Hughes went on to make his fortune in the USA with his printing telegraph recorder.

Which reminds me. Twenty plus years ago we had the clockwork receiver which had been designed and used widely in Africa and isolated places where replacements batteries were not available.

Has anyone invented a clockwork transmitter or transceiver?

Floating Antennas

A U.S. based company is planning a unique digital wireless communications platform about 4.6 km above the earth. It is a 46 m long aerostat (airship) moored to the ground and floating in a restricted space. It is said that this would give a cell-phone coverage of about 40,000 sq. km. Thank goodness the first installation will be over the State of Goias in Brazil. A pilots nightmare – but a great 2 m repeater!

(Oct RadCom)

Contests

Ian Godsil VK3VP
contests@wia.org.au

Contest Calendar December 2001–February 2002

Dec	15-16	ARRL 10 Metres Contest	(CW/SSB)		
Dec	15-16	10 Metres SWL Contest			
Dec	15	OK RTTY Contest			
Dec	15-16	Croatian CW Contest			
Dec	15-16	International Naval Activity	(CW/SSB)		
Dec	26	Ross Hull Memorial VHF Contest begins	(CW/SSB/FM)	(to Jan 13, 2002)	(Dec 01)
Dec	29	RAC Canada Winter Contest	(CW/SSB)		
Dec	29	16th Internet CW Sprint Contest			
Dec	29-30	Original QRP Contest	(CW)		
Dec	29-30	Stew Perry 160 Metres Distance Challenge	(CW)		
Jan	5-6	ARRL RTTY Roundup			
Jan	12-13	Summer VHF Field Day			(Dec 01)
Jan	11-13	Japan Intl DX Contest 160m–40m	(CW)		(Dec 01)
Jan	20	HA DX Contest	(CW)		
Jan	25-27	CQ 160 Metres Contest	(CW)		
Jan	26-27	REF Contest			
Feb	2-3	Ten-Ten Intl. QSO Party	(SSB)		
Feb	9-10	WW RTTY WPX Contest	(RTTY)		
Feb	9	Asia-Pacific Sprint	(CW)		
Feb	9-10	PACC Contest	(CW/SSB)		
Feb	16-17	ARRL Intl. DX Contest	(CW)		
Feb	22-24	CQ 160 Metres Contest	(SSB)		
Feb	23-24	REF DX Contest	(SSB)		
Feb	23-24	RSGB 7MHz DX Contest	(CW)		
Feb	24	High Speed Club CW Contests			

Greetings to all readers.

CQ Contest Survey

In the August edition of "CQ Amateur Radio" magazine the results of a Contest Survey conducted earlier in the year were published. These make most interesting reading and I commend this article to you all (pages 88-90). I was quite surprised at some of the findings, as apparently was John Dorr K1AR who writes the column.

Some salient points from this survey are-average age 47.53 years; average contesting experience (in years) 18.78; most considered their stations ordinary, with emphasis on antenna switching and best use of SO2R (single operator two radios); favourite mode CW; average amount spent on contesting in last two years US$5,386. Certainly most respondents were from USA/Canada, but responses were received from 30 countries, including one from VK. Do please look at this article for yourself.

Again I take this opportunity to enlist your support for the annual Ross Hull VHF Contest (see dates in Calendar). I think it quite likely that there will be some interesting openings, even allowing for sunspots having peaked for this cycle. And there is the rule about selecting your best group of days, so it is not a case of having to be there all the time. Let's hear from you this year!

I wish you all a very holy Christmas, happy holiday season and good contesting in 2002.

73, Ian Godsil

Results CQWW DX SSB Contest 2000

(VKs only Call\band\score)

Single Operator:

VK5GN	All	3,494,205
VK1JDX	"	208,582
VK4DMP	"	137,367
VK2BCQ	"	89,474
AX4EJ	"	1,203,124
VK3OJ	"	49,692
VK2ARJ	28	479,987
VK4UC	"	431,900
VK8DK	"	100,362
VK2HV	"	87,087
VK2EM	"	45,990
AX8HZ	21	373,932
VK4EMM	14	667,056
AX3TZ	7	36,096

Assisted:

VK6WR	All	83,385

Multi-operator Single Transmitter

VK4WIL	All	2,278,500

Results CQ WW DX CW Contest 2001

(VK/ZL only Call\band\score)

Single Operator

VK5GN	All	1,270,698
VK4XY	3.5	30,857
VK2DPD	All	190,920
VK4DX	28	638,950
VK4UC	28	256,161
VK4TT	28	130,232
VK6HG	28	17,520
VK4EMM	21	815,850
VK4XW	21	11,505
VK3TZ	1.8	12
ZL1AIH	28	72,323
ZL3JT	21	102,752

Multi-operator Single Transmitter

VK8AR	All	28,017
(Ops. VK8TM/TX)		
ZL6QH	All	5,541,516
(Ops. JH3KNW,ZL1AZE, ZL2BSJ)		
ZL3CW	All	3,660,618
(Ops. F2CW, JA4EKO)		

Results ANARTS WW RTTY Contest 2001

from Jim VK2BQS

162 logs received, being 151 Single Operator category, nine multi-op and two SWL logs. Many thanks to all who took this trouble.

(World posn\call\score\awards)

Single Operator

1	VK2KM	19,782,336	1st World/ OC/VK2
16	VK6GOM	7,306,740	1st VK6
30	VK4WPX	3,647,800	1st VK4
50	VK2SG	2,133,756	2nd VK2
109	VK2BQS	508,728	3rd VK2

Multi-operator

4	VK2RT	9,921,984	4th World, 4th OC/VK2
8	VK4DZ	1,063,140	2nd OC, 1st VK4

NZART Memorial Contest 2001 Results

from Win Gilbert ZL2GI, Contest Manager

There were fewer entries in each section compared to last year except the Auckland Shortwave Cup- CW only, where the numbers were the same. Last year 32 logs were received compared to 26 this year. Features were that about 8 logs out of 26 were received by electronic mail, the summaries and logs were of a very high standard, there were no ZL3s and 2 ZL4s taking part on phone and only a few more on CW. VKs were well down this year (3 compared to 7).

The winners in the various sections are:

The Memorial Trophy: John Shaw ZL1BYZ
Phil Armstrong Memorial Plaque: Denys Brosnan ZL2AWH
Auckland Shortwave Cup: Barry Kirkwood ZL1DD
Mannell Trophy: Geoff Reed ZL1AKY
Laing Smith Trophy: no award
Ron Gray Memorial Shield: no award
Brother John Rodgers Plaque: Bill Cousins ZL2AYZ

Name	Callsign	ZL1	ZL2	ZL3	ZL4	VK	DX	Total phone	ZL1	ZL2	ZL3	ZL4	VK	DX	Total CW	Total Pts	Power
Memorial Trophy—Phone and CW																	
John Shaw	ZL1BYZ	42	40	10	5	13	0	640	55	29	0	6	6	0	689	1329	-
Leo Hodge	ZL2AJB	39	46	8	3	9	0	536	59	25	0	6	4	0	659	1195	-
P J Moore	ZL2AUB	44	45	3	3	17	0	573	45	27	0	3	1	0	527	1100	-
Bernard	ZL1WT	34	36	7	2	11	0	522	36	7	0	3	0	0	361	883	-
Westerbaan																	
John Stuart	ZL2ADN	21	30	5	1	0	0	341	28	13	0	3	0	0	357	698	-
Phil Armstrong Memorial Plaque—Phone only																	
Denys Brosnan	ZL2AWH	48	45	9	6	31	0	833	-	-	-	-	-	-	-	833	-
Alex Learmond	ZL1BVK	41	54	10	6	32	0	767	-	-	-	-	-	-	-	767	-
Hector	ZL1BRY	41	49	10	6	21	0	729	-	-	-	-	-	-	-	729	-
Anderson																	
Stan Russell	ZL2BRS	46	48	10	0	27	0	724	-	-	-	-	-	-	-	724	-
Warren Strong	ZL3TX	28	35	5	4	4	0	449	-	-	-	-	-	-	449	-	
Susan Brain	VK7LUV	21	17	3	1	7	0	40	0	-	-	-	-	-	-	-	400
Tom Hardwick	ZL4HD24	22	5	0	3	0	365	-	-	-	-	-	-	-	365	-	
Alan Brain	VK7JAB	18	15	4	1	2	0	342	-	-	-	-	-	-	-	342	-
Geoff Clark	ZL3GA	20	25	5	0	0	0	320	-	-	-	-	-	-	-	320	-
Auckland Shortwave Cup—CW only																	
Barry Kirkwood	ZL1DD	-	-	-	-	-	-	-	62	33	0	6	14	7	939	939	-
Paul Slako	ZL1PC	-	-	-	-	-	-	-	59	34	0	6	12	4	859	859	-
Ken McCormack	ZL1AIH	-	-	-	-	-	-	-	58	34	0	6	11	5	854	854	-
John Balsillie	ZL1ALZ	-	-	-	-	-	-	-	64	37	0	6	8	1	810	810	-
Peter	ZL4GU	-	-	-	-	-	-	-	63	34	0	0	9	0	731	731	-
Brentwood																	
Ron Willcocks	ZL1AJP	-	-	-	-	-	-	-	57	35	0	6	5	1	729	729	-
Rodney Ede	ZL1BBJ	-	-	-	-	-	-	-	51	25	0	6	3	0	607	607	-
Ian Godsil	VK3VP-	-	-	-	-	-	-	37	11	0	6	1	0	440	440	-	
Roy Milam	ZL1WI-	-	-	-	-	-	-	30	14	0	3	0	0	372	372	-	
Mannell Trophy—Low Power																	
Geoff Reed	ZL1AKY	39	36	6	1	0	0	375	52	25	0	6	0	0	570	945	10W
Bill Cousins	ZL2AYZ	26	28	7	1	0	0	363	41	16	0	6	2	0	499	862	8W
G Luscombe	ZL2AVL	0	0	0	0	0	0	0	60	26	0	6	3	0	657	657	5W
Brother John Rodgers Plaque—Homebrew SSB																	
Bill Cousins	ZL2AYZ	26	28	7	1	0	0	363	41	16	0	6	2	0	499	862	8W

Ross Hull Memorial VHF-UHF Contest 2001-2002

From John Martin VK3JWA, Contest Manager

The Contest

The WIA maintains a perpetual trophy in honour of the late Ross A. Hull and his pioneering achievements in VHF and UHF operation. The name of each year's contest winner is engraved on the trophy, and other awards may be made in the various divisions of the contest. The contest is open to all amateurs.

Duration

0000 UTC Wednesday, December 26, 2000 to 2400 UTC Sunday January 13, 2002. In Eastern Summer Time, that is 11 a.m. on December 26 to 11 a.m. on January 14.

Sections

A. Best 7 UTC days nominated by the entrant.

B. Best two UTC days nominated by the entrant.

Entrants may submit logs for either section. The nominated UTC days need not be consecutive. The overall winner will be the top scorer in Section A. If the overall winner has also entered Section B, his/her log will be excluded from Section B.

General Rules

One callsign and one operator per station. One contact per station per band per UTC day. Repeater, satellite and crossband contacts are not permitted. No contest operation below 50.150 MHz. Band plan calling frequencies should not be used for contest calls, exchanges, or liaison. A contest calling frequency of .150 on each band is suggested. All rulings of the Contest Manager will be accepted as final.

Penalties

Minor errors in distance estimates or calculations may be corrected and the score adjusted. Contacts made on calling frequencies will be credited if the entrant provides a satisfactory explanation of why it was not practical to use another frequency. Otherwise such contacts will be disallowed. Persistent unnecessary use of calling frequencies or false log entries will lead to disqualification.

Contest Exchange

RS (or RST) reports plus a serial number. Serial numbers need not be consecutive. For difficult propagation modes such as meteor scatter, exchange of a total of two digits is sufficient for a valid contact.

Scoring

For 2 metres and above, one point per 100 km or part thereof (i.e. up to 99km: 1 point, 100-199 km: 2 points, etc).

For 6 metres only, contacts below 1000 km as above. Contacts from 1000 km to 2400 km, 2 points regardless of distance. Contacts over 2400 km, 20 points regardless of distance.

The band multipliers are:

6 m	2 m	70 cm	23 cm	Higher
x1	x3	x5	x8	x10

Logs

Logs must cover the full contest period and contain the following for each contact:

- Date and UTC time.
- Station location (if operating portable).
- Specific FREQUENCY (not just band) and callsign of station worked.
- Approximate location or grid locator of station worked.
- Reports and serial numbers sent and received.
- Estimated distance worked and points claimed.

Separate scoring columns for each band would be helpful.

Cover sheet

Logs must be supplied with a cover sheet containing:

- Operator's callsign, name and address.
- Station location (if different from the postal address).
- Section(s) entered, and a list of the UTC days to be scored.
- A scoring table set out as the example below.
- A signed declaration that the station has been operated in accordance with the rules and spirit of the contest, and that the contest manager's ruling will be accepted as final.

Deadline

Paper logs may be posted to the Federal Contests Co-ordinator,

57 Nepean Highway, Aspendale, 3195. Electronic logs in ASCII format should be e-mailed to: vk3vp@vkham.com by Friday, 8 February, 2002. Early logs will be much appreciated.

International Museums Weekend 2002

Earlier this year, in June, I ran what proved to be a very popular and enjoyable amateur radio event in Great Britain, called the 'National Museums Weekend 2001' (NMW 2001).

Next year the event will become an international one, and be renamed the 'International Museums Weekend 2002' (IMW 2002). The IMW 2002 will take place on the weekend of the 15th and 16th of June 2002. Individual operators as well as amateur radio clubs from around the world are invited to join in the event, by setting up a special event station at your local museum.

Registration is a requirement for taking part in the event. Registration is free via the website.... http://www.imw.f2s.com/ More information about the event can also be found there.

Nearer the event, the original NMW 2001 web site http://www.qsl.net/m1byt/ will eventually become a mirror site for the IMW 2002.

Regards,

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Sample Scoring Table

Band	6 m	2 m	70 cm	etc
Score	xxxx	xxxx	xxxx	xxxx
Band Mult.	x1	x3	x5	xx
Total	xxxxx +	xxxxx +	xxxxx +	xxxxx

= xxxxx (GRAND TOTAL)

Note on Calculating Distances

Absolute accuracy is not required. All you need to know is whether the other station is above or below the nearest multiple of 100 km. An easy method is to use a compass to draw 100 km circles around your location on a map. Better estimates can be made from six-digit Maidenhead locators, using a computer program, which is available from the contest manager. It can be obtained by sending an e-mail to the address given above.

Summer VHF-UHF Field Day 2002

From John Martin VK3KWA

The next Summer VHF-UHF Field Day will take place on the weekend of January 12 and 13, 2002. The rules are the same as for the last Spring Field Day.

Please remember that I would appreciate comments on several questions I raised when publicising the rules for last November's Field Day. There are:

- Should the 24 hour single operator section be shortened?
- Should there be a six hour multi-operator section?
- Is the scoring advantage of "grid hoppers" too high?

I would be grateful to receive comments on these or any other points with your log.

Dates

January 12 and 13, 2002.

Duration in all call areas other than VK6: 0100 UTC Saturday to 0100 UTC Sunday.

Duration in VK6 only: 0400 UTC Saturday to 0400 UTC Sunday.

Sections

A: Portable station, single operator, 24 hours.

B: Portable station, single operator, any 6 consecutive hours.

C: Portable station, multiple operator, 24 hours.

D: Home station, 24 hours.

Single operator stations may enter both Section A and Section B. If the winner of Section A has also entered Section B, his log will be excluded from Section B.

If two operators set up a joint station, they may enter Section C under a single callsign, or sections A/B under separate callsigns. If they enter Sections A or B, they may not claim contacts with each other. Stations with more than two operators must enter Section C.

General Rules

One callsign per station. Operators of stations in Section C may not make contest exchanges using callsigns other than the club or group callsign. Operation may be from any location, or from more than one location. You may work stations within your own locator square.

A station is portable only if all of its equipment, including antennas, is transported to a location that is not the normal location of any amateur station.

Repeater, satellite and crossband contacts are not permitted. No contest operation is allowed below 50.150 MHz. Recognized DX calling frequencies must not be used for any contest activity. Suggested procedure is to call on .150 on each band, and QSY up.

Contest Exchange

RS(T) report, a serial number, and your four-digit Maidenhead locator.

Repeat Contacts

Stations may be worked again on each band after three hours. If the station is moved to a new location in a different locator square, repeat contacts may be made immediately. If the station moves back into the previous locator square, the three hour limit still applies to stations worked from that square.

Scoring

For each band, score 10 points for each locator square in which your station operates, plus 10 points for each locator square worked, plus 1 point per contact. Multiply the total by the band multiplier as follows:

6 m	2 m	70 cm	23 cm	Higher
x1	x3	x5	x8	x10

Then total the scores for all bands.

Scoring Table

Please use the following format for your table. In this sample the operator has operated from one locator and worked four locators on each band:

Band	Locators + (10 points each)	Locators + (10 points each)	QSOs x (1 point each)	Multiplier	= Band Total
6 m	10	+ 40	+ 40	x 1	= 90
2 m	10	+ 40	+ 30	x 3	= 240
70 cm	10	+ 40	+ 20	x 5	= 350
			Overall Total		= 680

Logs

For each contact: UTC time, frequency, station worked, serial numbers and locator numbers exchanged, points claimed.

The front sheet should contain the names and callsigns of all operators; postal address; station location and Maidenhead locator; the section entered; the scoring table; and a signed declaration that the contest manager's decision will be accepted as final.

Entries

Paper logs may be posted to the Federal Contests Co-ordinator, 57 Nepean Highway, Aspendale. Electronic logs in ASCII format should be e-mailed to: vk3vp@vkham.com by Friday, 8 February 2002. Early logs would be appreciated.

Japan International DX Contest 2002

LF CW: 2200z 11 Jan-2200z 13 Jan 2002

HF CW: 2300z 12 Apr-2300z 14 Apr 2002

PHONE: 2300z 8 Nov-2300z 10 Nov 2002

Object is to work as many JA stations + JD1 islands as possible.

Bands: LF CW 160/80/40; HF CW 20/15/10; Phone 80-10 (no WARC).

Categories: Single operator single/multi-band high power (more than 100 W o/p); single operator single/multi-band low power (less than 100 W o/p); multi-operator; maritime mobile.

General: Operate for maximum of 30 hours only and show rest periods in log; single op must perform all tasks himself; multi-op must remain on band for at least 10 minutes and during this time multi-op may transmit on another band only if new station is multiplier; ops may use spotting networks.

Exchange: RST plus CQ Zone number. JAs will send RST plus Prefecture number (01-50).

Score on 160m four points; 80m two points; 40/20/15m one point; 10m two points.

Multiplier is total JA prefectures + JD1 islands worked (possible 50 per band).

Final Score: multiply total points by total multipliers.

Logs (one per callsign) must show times in UTC; exchanges; multiplier first time worked; duplicate QSOs shown as no points; rest periods clearly marked; use separate sheet for each band.

Send Logs and summary sheet to: JIDX Contest, c/o Five-Nine Magazine, PO Box 59, Kamata, Tokyo 144, Japan, by 28 Feb, 31 May or 31 Dec. Logs may be submitted on 3.5 inch disk in ASCII with summary sheet, or by e-mail. For instructions send e-mail to <jidx-info@ne.nal.go.jp> with command #get jidxlog.eng or #get jidxlog.jpn

ar

FTAC Notes

John Martin, VK3KWA

160 Metre Band Plan

A few years ago there was some debate about the 160 metre band plan, with reports of clashes between local and DX contacts. The band plan was changed to include the recommendation that DX operation should have priority between 1820 and 1840 kHz. Since then the situation seems to have improved, with a fair amount of local activity moving out of the DX window.

But now it may be time to look again at this band. In the Australian band plan we have 1800-1810 kHz for exclusive CW use, and 1810-1815 kHz for digital modes. This does not agree very well with existing practice here or overseas. For one thing, I understand that virtually all overseas CW activity is above 1820 kHz. And if there is any activity yet with digital modes, it doesn't seem to be occurring between 1810 and 1815 kHz.

In the meantime the ARRL has adopted a new band plan which includes the following:

1800-1810 Digital modes
1810 CW QRP calling frequency
1843 Lower limit for SSB operation
1910 SSB QRP calling frequency

We should look closely at the ARRL plan and see if it is possible to make adjustments that would agree more closely with American practice.

There are several aspects of the ARRL plan that would not work here. Obviously 1910 kHz is irrelevant to us, and restricting SSB to 1843 kHz and above might not go down well. And thanks to a ready supply of cheap surplus crystals for those old AM transmitters, 1843 kHz is becoming established as an AM net frequency.

As for digital modes, I assume that much of the activity using these modes would be with American stations, so it would make sense to follow the ARRL's example and move our digital modes segment to 1800-1810 kHz.

A proposal has been put forward by VK6VZ and VK6HD to bring our band plan more closely into line with the American one. Their plan is as follows:

1800-1810 Digital modes
1810-1840 CW only
1840-1875 SSB and AM

This plan follows the ARRL's example in dropping the idea of a DX window as such. Steve VK6VZ made the following comment on this: "The ARRL has thrown out the idea of a DX window and, after some thought, Mike and I believe Australia should do the same. Mode separation is much more important-DX CW ops don't have any problems from with local CW operations, or vice versa, but they do have problems with wide and strong SSB/AM signals."

Peter Parker VK3YE has made a similar suggestion, although he suggests allowing SSB (but not AM) between 1830 and 1840 kHz. He also proposes that 1843 kHz be recognised in the band plan as an AM net frequency.

I would be grateful for any comments from 160 metre operators.

ar

Ross Christie, VK3WAC
19 Browns Road, Montrose 3765, Vic.
Email vk3wac@aol.com

Into 2002 with tender love and attention

Another year almost gone and I'm sure I won't be the only person asking where the time has gone. Early this year we reached the peak of Cycle 23 and for me propagation during the winter months was pretty disappointing. I erected a couple of new antennas (a shortened vertical and counterpoises for 40m and a 17/12 metre vertical) anticipating better conditions but was not impressed by their performance. The antennas tuned up nicely and brought in reliable signals but signal levels were well down on what I was expecting. Comparing reception against my G5RV revealed that the antennas were working reasonably well, leaving only conditions to blame. Hopefully, as we get into the summer months, conditions will improve on the higher bands although 40 and below will suffer from the usual QRN from storms etc.

2001 will certainly go down as a year to be remembered, not simply because it is the first year of the new millennium (all arguments are academic now) but primarily for the devastating terrorist attacks on the USA. Amateur radio is a hobby that is ideally suited for fostering closer links with those from other cultures and backgrounds and we should all make an effort to use it for just such a purpose. This month will see Christmas celebrated (in one form or another) in most western countries where wishes for peace and prosperity are extended to family, friends and members of the general public we make contact with. We should extend the same wishes to those amateurs who reside in countries that do not celebrate Christmas as we do (if at all). We can at least explain the humane part of the celebrations even if we do not agree with the religious interpretations ourselves. What better gift can we bestow upon each other than peace and understanding?

Many New Years resolutions are bound to be made and quickly forgotten; however, I will make one that I am sure will fulfil. I have purchased a second-hand TL922 linear amplifier that is in need of some urgent tender love and attention. The previous owner must have left it out in the weather for a period of time as there is considerable water damage inside. Panels are rusty, the meter switch is defunct, the HV capacitors require changing, the tubes need replacing and the unit is dirty and mechanically loose inside. I intend to completely strip and rebuild the amplifier to as near new condition as possible over the next 12 months. At this point I'll take the opportunity to wish you all a very Merry Christmas and a happy and safe New Year in 2002.

The DX

4W, EAST TIMOR. Carlos, CU3FT, is in East-Timor and is expected to operate as 4W/CU3FT. He will be on the air as soon as is practical and intends to be on all bands especially WARC and 6 metres. QSL via CT1EEB. [TNX CU3FT, 425 DX News and OPDX]

5H1, TANZANIA. Charlotte, KQ1F/5H1F and Paul, K1XM/5H1X, are travelling through Tanzania and hope to get in some /P operating. They will be in Tanzania until the 10th of Dec. QSL route for both calls is via KQ1F. [TNX KQ1F, K1XM and The Daily DX]

5W, SAMOA. Bill, W7TVF, intends to operate from here between the 20th of Nov until the 10th of Dec. He will be on 160 – 6 metres mainly CW with special attention paid to Europe and Africa on the lower bands. More info can be found at http://www.air-internet.com/~w7tvf. No mention of a QSL route but most likely via the buro to W7TVF. [TNX W7TVF and The Daily DX]

9U, BURUNDI. Gus, SM5DIC, is heading back to Burundi for about three months beginning the 16th of November. He will be using an IC-706 and a 3-element beam for 6 metres. While there he also intends to try some EME work by running a 400-watt amplifier to a 17-element yagi. HF operations are also planned but he will only be using simple wire antennas. The local authorities assure him they will re-issue his previous call (9U5D). QSL via SM5BFJ, Leif Hammarstrom, Lerklockan 4, SE-73091 Riddarhyttan, Sweden. [TNX SM5DIC and OPDX]

HI3, DOMINICAN REPUBLIC. Julio, AD4Z/HI3K will be back home between the 21st of Nov and the 9th of Dec 2001. He will operate from his father's station (HI3J) as HI3K and will operate on all HF bands with special attention to 160m and WARC, mostly on CW. If you would like to work HI then you can contact Julio at USA002@hotmail.com for QSO. QSL via AD4Z. [TNX AD4Z and 425 DX News]

JX7, JAN MAYEN. Per, LA7DFA, is heading back to Jan Mayen and will be on air as JX7DFA at least until April 2002 and possibly longer. No mention of a QSL route, but try his home call via the buro. [TNX LA7DFA and The Daily DX]

KC4, ANTARCTICA. Chris, N3SIG is currently active on 20, 17 and 15 metres SSB as KC4/N3SIG from McMurdo Station on Ross Island (AN-011), Antarctica. He will be there until March 2002. QSL via AI3D. Chris says QSOs can be arranged by sending an E-mail to n3sig@arrl.net [TNX OPDX Bulletin and 425 DX News]

S79, SEYCHELLES. Clemens, DL2GAN, will be in the Seychelles from the 15th of Nov until the 5th of Dec using the call S79GAN. He will be active on all bands 10-40 meters on CW and SSB. Equipment will be a veteran FT-7B running 50 watts to verticals and multi-band dipoles. QSL via DL2GAN [TNX DL2GAN and The Daily DX]

V44, St KITTS. Larry, KJ4UY, is heading back to Nevis and St. Kitts to operate as V47UY from the 22nd of Nov until the 4th of Dec. Karl, V44NK is providing Larry with accommodation where he will run 100 watts on all bands. QSL via KJ4UY. [TNX KJ4UY and The Daily DX]

ZD9, GOUGH ISLAND. Chris, ex-ZS8IR, is currently active as ZD9IR and will be active for the next year from here.

He is expected to be active on all bands 160-10 meters using CW/SSB/RTTY modes. He is only using wire antennas at the moment but has plans for a 20/15/10 metre beam and arrays for the lower bands. Chris has been heard often during late Oct and Nov on 30/17/15/10 metres. QSL via ZS6EZ. [TNX ZS8IR and OPDX]

IOTA Activity

3XY6A, ROOMA ISLAND (AF-151), GUINEA. Francois, VE2XO, will return to Guinea near the end of December or the beginning of January and intends to operate from Conakry as 3XY6A. On this trip he expects to operate from **Rooma Island** (AF-051) with a special callsign. QSL via VE2XO. [TNX VE2XO and The Daily DX]

3W, VIETNAM. The IOTA DXpedition to **Cham Island in the South China Sea** (AS-???) is now planned for the 17th until the 22nd of April 2002. Shu, JA6IEF, Yuki, JI6KVR and Hau, 3W6LI plan to have two stations operating on SSB and CW. QSL is via EA5KB. [TNX JI6KVR and 425 DX News]

I, ITALY. Tony, IK8VRH will operate as IB0/IK8VRH from the islands of **Ventotene (EU-045) and Ponza (EU-045)** in his free time between the 1st of Nov and the 15th of Dec. QSL via IK8VRH. [TNX IK8VRH and 425 DX News]

JA, JAPAN. Masafumi, JA6GXK will be active from the lighthouse on **Mejima, Danjo Islands** (AS-056) from the 27th of Nov until the 6th of Dec and the 27th of Dec until the 7th of Jan. QSL via JA6GXK. [TNX JI6KVR and 425 DX News]

YB, INDONESIA. Adi, YC3MM plans to be active from **Siberut Island (OC-215)** during the third week of December. This IOTA group (Mentawai Islands) is rare, the last time back in May 1996 by 8A5ITU. No QSL info but try YC3MM via the buro. [TNX IZ8CCW and 425 DX News]

Silent Key

The WIA regrets to announce the recent passing of:-

F J (Frederick) Stirk VK2ABC

Special Events

The special event station **IY1SP** will be active until the 31st of Dec to commemorate Guglielmo Marconi's radio transmitting experiments conducted in 1901 and 1931. A commemorative IY1SP QSL card is available by QSL'ing direct (c/o Sezione A.R.I. La Spezia, P. O. Box 45, 19100 La Spezia - SP, Italy) or via the buro to I1FNX. [TNX IW1PDP, 425 DX News and The Daily DX]

OQ, BELGIUM. Keep an ear open for Belgian amateurs using the special prefix of OQ instead of their normal ON or OT prefixes from the 26th of Oct until the 31st of Dec. The Belgian telecommunications authorities have authorised use of this special prefix in celebration of the birth of "Princess Elisabeth". [TNX OPDX]

DXpeditions

5U, NIGER. The same group of operators who operated as 5U2K, 5U3T and 5U5A in March (I2UIY, I2YSB and IK2DIA) will be returning to Niger in Jan and Feb 2002 for a 2 week DXpedition. Another three of four operators from Italy and the USA are expected to join up with the team while there. Plans are to have at least three stations active on 160-10 metres, with special attention to 80/160m, on CW/SSB/RTTY/PSK31 modes and a station on 6 metres CW/SSB. Further information is expected next month. [TNX I2UIY and 425 DX News]

Round up

IR7, ITALY. Alfredo, IK7JWX says that the special callsign **IR7GM** will be aired during all the weekends of December 2001. No reason was expressed for the call but a good guess would be something to do with G. Marconi. A commemorative QSL card is available via IK7JWX, bureau or direct. [TNX IK7JWX and OPDX]

In Octobers DX Notes I included a note on the planned activation of the call **XP1AB (GREENLAND)** stating that it had not been on the air since the 1960's. Well, Maylon Harvey, WA2UUK, sent a short note to the OPDX bulletin shedding more light on the callsign. Maylons note states "I operated XP1AB while on Temporary Duty (TDY) with the Air Force at Sondrestrom AFB, Greenland, from July 20-29th, 1977. So as you can see the callsign has been used since the 1960's". The note goes on to say "Maylon also knows of one other operation by WA7ZLC who made 229 QSOs in August 1977 and gave WA3HUP as his QSL Manager. He also thinks there were some other small operations. XP1AB was the Air Force MARS callsign for Sondrestrom at that time. Maylon states he made 1,080 contacts and still has the logs and a few blank cards. In the years since then, he has received QSL requests and has sent cards to about 40% of those contacts. Anyone still wanting one, can send a SASE to WA2UUK (QRZ, CBA okay), and he will get a card out right away." [TNX WA2UUK and OPDX]

R1, ANTARCTICA. Alex, RA1PC is working for the AARI (Arctic and Antarctic Research Institute) and will be active as **R1ANC from the Russian Antarctic Base "Vostok" (IOTA AN-016, WABA UA-010)** from early in Nov 2001until late Jan 2002 when he will be replaced by Alan, UA1PAC, who will be there until Jan 2003 operating as R1ANC. QSL via DL5EBE. [TNX DL5EBE and 425 DX News]

Z3, MACEDONIA. Vlado, Z35M, is running his own personal "QSO MARATHON" during the calendar year 2001 (January 1st-December 31st) from his home QTH. He says that as of the 2nd of Oct he has made 26,420 QSOs on HF and hopes to reach 30,000 QSOs by early Nov. His QSO total since Aug 1987 stands at 136,920 (under his other callsigns: YU5KV, 4N5KV, Z32KV, Z350KV and Z35M). Vlado (a very busy lad!) can often be found on 20 metres CW (around 14026 kHz) between 2245 and 0400Z. He also frequents 10 metres CW/SSB between 1000 and 1500Z. If you hear him give him a call and get in his logbook. [TNX Z35M and OPDX]

ZL, NEW ZEALAND. Andy, GM0NWI will be active as ZL/GM0NWI mainly on 20 and 40 metres CW QRP between the 30th of Oct and the 24th of Jan. QSL via GM0NWI. [TNX GM0VRP and 425 DX News]

Sources

Our thanks and seasons greetings go to the following stations and organisations for providing the news and information for this month; CU3FT, KQ1F, K1XM, W7TVF, SM5DIC, AD4Z, LA7DFA, DL2GAN, KJ4UY, ZS8IR, JI6KVR, IK8VRH, IZ8CCW, IW1PDP, I2UIY, IK7JWX, WA2UUK, DL5EBE, Z35M, GM0VRP, The Daily DX, OPDX Bulletin and 425 DX News.

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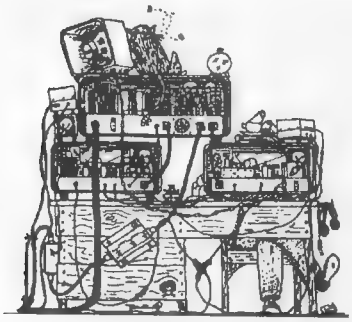


Part 9: Expanding Ports

The basic personal computer (PC) is supplied with only two (RS232) communications ports as standard. Modern computers offer two extra Universal Serial Ports (USB) to connect with peripherals like cameras, networks, printers and scanners etc. However, there is little in the way AR software written for USB connections, so we are stuck with using just the RS232 ports for AR applications. Not so good for the AR operator seeking to expand! For the solution – read on.

AR Requirements

Each Radio Amateur has their own opinion of what's best for their own Ham Shack Computer. That is what makes today's AR activities so interesting and diverse. Many stay on the HF bands and explore options like the new digital modes, whilst others may track satellites, Global Positioning (GPS) or computer track long haul beacons on VHF/UHF/SHF and more. Whatever your own interests may be, you will, at some point need to expand the number of communications ports in your computer.

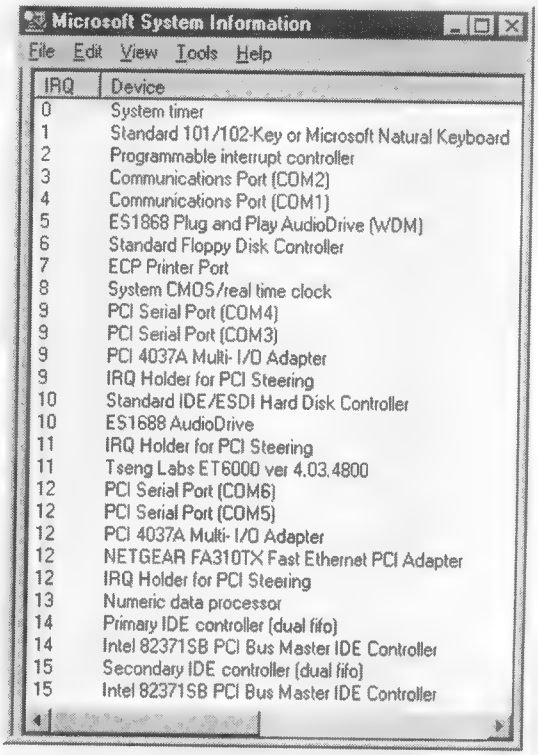
In an active modern AR station, RS232 communications ports might be required to independently control a:

1. Serial mouse.
2. Packet radio TNC.
3. HF transceiver.
4. HF antenna rotator.
5. VHF/UHF transceiver.
6. VHF/UHF antenna rotator.
7. Internet modem.
8. PSK31 PTT interface for HF.
9. Hand-held VHF/UHF transceiver
10. No-break standby power supply.
11. Spare port for experimentation.

In the above example, perhaps 10 ports might seem a tall order even for the keenest operator. However, it's a very real and big problem for proactive AR operators these days and certainly not an unrealistic target.

Up until recently, even trying to install four ports was a big problem because the motherboard lacked access to spare system interupts (IRQ's). Windows 95 and later operating systems allow users to access the system configuration, and allocate resources to additional computer comports and other devices. However, most computers may only have two spare IRQ's, that does not always work well on some comport expansion cards with limited jumper settings. If these cards are installed, changing the default "basic configuration settings" can cause interrupt faults to occur where your ports, software, and/or other external devices may "hang".

There are just 15 available IRQ's in the modern PC, and most are gobbled up in running the computer in the first place!


Microsoft System Information
File Edit View Tools Help
IRQ Device
0 System timer
1 Standard 101/102-Key or Microsoft Natural Keyboard
2 Programmable interrupt controller
3 Communications Port (COM2)
4 Communications Port (COM1)
5 ES1868 Plug and Play AudioDrive (WDM)
6 Standard Floppy Disk Controller
7 ECP Printer Port
8 System CMOS/real time clock
9 PCI Serial Port (COM4)
9 PCI Serial Port (COM3)
9 PCI 4037A Multi- I/O Adapter
9 IRQ Holder for PCI Steering
10 Standard IDE/ESDI Hard Disk Controller
10 ES1688 AudioDrive
11 IRQ Holder for PCI Steering
11 Tseng Labs ET6000 ver 4.03.4800
12 PCI Serial Port (COM6)
12 PCI Serial Port (COM5)
12 PCI 4037A Multi- I/O Adapter
12 NETGEAR FA310TX Fast Ethernet PCI Adapter
12 IRQ Holder for PCI Steering
13 Numeric data processor
14 Primary IDE controller (dual fifo)
14 Intel 82371SB PCI Bus Master IDE Controller
15 Secondary IDE controller (dual fifo)
15 Intel 82371SB PCI Bus Master IDE Controller

So there just has to be a better way, and that's by sharing (called polling) IRQ's without interaction between any of the ports that may cause your devices to "talk-to-each-other" and the PC to fail.

The Microsoft System Information file (sysinfo.exe) found in your Windows directory) can display the IRQ resources in your computer, and the illustration shown on this page highlights both the problem – and the solution.

Motherboard Resources

Lift the lid in your PC and determine what type of motherboard, processor, and RAM chips you have in your machine. VX/BX chips and later motherboards have what's called PCI bus slots (WHITE SOCKETS, 32 bit) as well as older ISA bus slots (BLACK SOCKETS, 16 bit). These black and white connectors are used to plug-in devices like – sound, display, hard and floppy drive control, network cards, and optional extra communications port cards. ISA slots are the older style sockets typical of 16-bit computers, and the newer PCI slots use 32-bit information exchange with your microprocessor. Dedicated microprocessor technology has been developed to share IRQ's as seen in the illustration without interaction between ports. Note: IRQ's 9 and 12 in the example.

Dolphin Cards

Dolphin Peripherals of Monterey in California (1) have developed a family of microprocessor controlled, expansion port cards – at an affordable price, and stocked by Dick Smith Electronics stores in Australia (2). Initially designed for high-speed communications networks (almost a Mb transfer rate), these cards offer cost effective options for AR operators. These cards are MS Windows 95/98/2000/ ME/XP/NT4 plug-and–play ready, and also for Linux based computer systems. In fact, using these cards, you can expand up to 256 separate comports provided you can find enough PCI slots to put them all in, Hi.

The range of DSE cards includes:
Two serial, ISA - XH6655
Two serial, PCI – XH6656
Two serial, One parallel, PCI - XH6658

The writer has used multiple PCI cards (XH6656) with huge success. Each card is supplied with a CD-ROM containing special drivers for Windows and Linux machines. For readers seeking a secondary IDE solution (say to install a second, high capacity hard drive), a two IDE PCI card is also available (DSE XH6659).

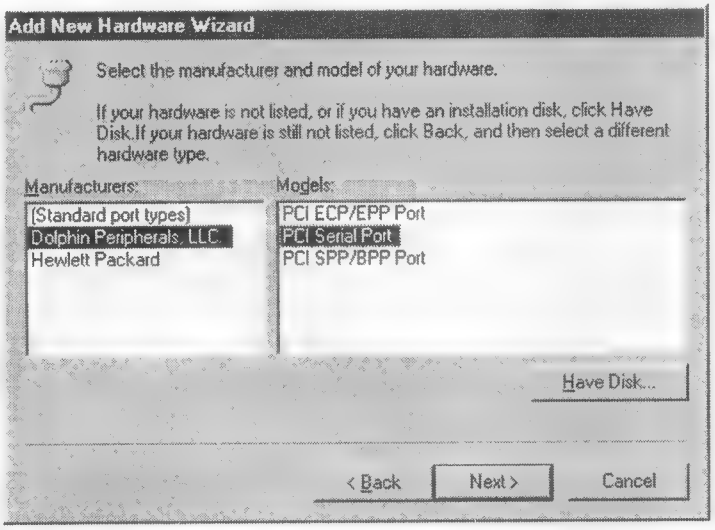
Installation

Switch off your computer and remove the case. Check the availability of spare slots. It's very likely that you may have to move your existing cards around to make space to plug in your new expansion card(s), and this should be done first. Make sure that the power cord is connected but the computer is switched off. Use an anti-static wrist strap firmly earthed to the computer chassis. Unpack one new card and plug into a spare slot. Fit the earthing plate screw, and switch on the computer.

Windows will identify that "New Hardware" has been installed. Insert the CD-ROM, then select New Communications Port(s) rather than let Windows seek out what hardware has been installed. Once the comport option has been selected, select "Have Disk" and install your new card. Interestingly, you will find that sysinfo.exe (see example on the previous page) reports that your new hardware has been installed – and that comport sharing now exists for your new card.

It takes about 60 seconds to install new PCI cards using the Dolphin CD-ROM – now that's really fast!

If you intend to fit a second card – repeat the same procedure. DO NOT install both cards at the same time. On the second card, use the CD-ROM as before and Windows will add the second card and driver, but will allocate a new shared IRQ. Again, note the sysifo.exe example on the previous page. It takes another 60 seconds to install a second new comcard.


Add New Hardware Wizard
Select the manufacturer and model of your hardware.
If your hardware is not listed, or if you have an installation disk, click Have Disk.If your hardware is still not listed, click Back, and then select a different hardware type.
Manufacturers:
Models:
[Standard port types]
Dolphin Peripherals, LLC
Hewlett Packard
PCI ECP/EPP Port
PCI Serial Port
PCI SPP/BPP Port
Have Disk...
< Back
Next >
Cancel

Assuming that two new PCI comport cards have been installed; you will be presented with an array of DB9 sockets on the rear panel of your PC. Com 1 and Com 2, PLUS the new Coms 3-4 and 5-6. All the new ports will have DB9 connectors. Which one is which? The first card should give you Coms 3-4, and the second new card – Coms 5-6. Carefully identify each port using say your packet TNC or transceiver control software, then lable them accordingly.

It's wise to use the Control Panel – System – Port Properties to set the advanced configurations to the desired application for your new ports. For example, speed, handshaking and other Advanced Properties.

The writer, for his own PC, has drawn up a chart listing all the settings and options for each of six ports so that the software used for each application "talks" correctly to the designated port.

Summary

This article has briefly described a cost-effective solution to installing multiple communications ports using Dolphin Peripherals products from Dick Smith Electronics. The topic is perhaps more appropriate to experienced users. There are other solutions used in the professional IT world but they are more expensive, and beyond the pockets of most AR operators. Today, plug-and-play technology has made the task of computer upgrading an easy task – let's go for it!

Ham Tip No. 9

DB9 connecting leads can be home brewed by buying the plugs and sockets, and screened multicore cable at less than half the price of commercially made products. At the very least the cable length will be more appropriate for your Ham Shack Computer needs!

Ham Shack Computers, Part 10 - "Cleaning Windows" looks at tidying up your software, basic maintenance, "tweaking Windows" and doubling the speed of your Ham Shack Computer.

(1) Dolphin Peripherals:
http://www.dolphin.com
(2) Dick Smith Electronics:
http://www.dse.com.au
(3) Ham Shack Computers Web:
http://www2.tpg.com.au/users/vk6pg

73s de Alan, VK6PG

ar

Happy New Year to all our readers. We hope in 2002 your Amateur Activities are enjoyable and satisfying.

May all your projects work!!!!!

Why call CQ?

LB Cebik W4RNL
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E-mail: cebik@cebik.com, Web Page: http://www.cebik.com
(submitted by Peter Parker VK3YE with author's permission)

This morning (June 19, 1998), a thoughtful and oddly interesting question arrived via e-mail: what isthe deepest reason for someone to call "CQ" when that person has no idea of who may answer or whether anyone will answer at all? The following notes were my reply. I do not know if there is any single deepest reason for calling "CQ." I can only guess at such deep motivations, but here are a few thoughts.

For the brand new ham, there is a sense of wonder at the possibility of having a radio signal actually being heard and responded to. That alone is enough motivation to try, just to see what happens. In a way, it parallels the SETI project efforts to listen to outer space, just in case there is something to be heard and the efforts to place special identifying materials on some deep probe space craft, just in case someone out there may someday find the probe.

I also suspect that as the new ham becomes experienced, two things happen. First, wonder turns into curiosity, especially as replies become routine, but from where they come and from whom they come remain unknowns until the reply actually happens. Second, the first response has an excitement that can become addictive in the sense of one wanting to repeat the first experience over and over again.

....as the new ham becomes experienced, two things happen. First, wonder turns into curiosity, ...as replies become routine, but from where they come ...remain unknowns until the reply actually happens. Second, the first response has an excitement that can become addictive...wanting to repeat the first experience over and over again.

Although subsequent experiences are never quite like the first, since they do not have that initial anxiety of the totally unknown attached, new adventures into calling "CQ" have new dimensions, especially the human dimension. Every reply creates a new strand in a web of links among widely separated but still kindred spirits. Amateur radio, despite its internal disputes and diversity of activities, is still a community of human beings that cuts across all divisions of race, nationality, religion, and other things that divide us around the world. A "CQ" knows no such boundaries: our mutual interest in radio communications does not even break barriers: the barriers are simply not there. (I am sure this is truer in your region of the world, where boundaries are close in, than in the US, where a ham might spend his entire career talking only to folks within his own country.)

Interest in radio communications may offer a further contibuting factor to the motivation for calling "CQ." Such interest tends to mark a person out as an individual, someone a little different from most of his or her friends, neighbors, and co-workers. Hence, there is a natural desire for camaraderie, a sense that one is not alone, but linked to a community. That is why hams tend to form clubs and anticipate "eye-ball QSOs." That same urge for linkage results in calling "CQ' as an invitation to and a hope for a new strand in the linkage that tells us we are not alone and that hence gives meaningfulness to all our efforts to master the art, science, and craft of radio communications.

Linkage to a community brings out in us at least two different and opposing urges, and they occur in different proportions in different individuals. One urge is to compete with others in our broad community. so we compete in contests for points or for countries worked, or for anything else. The other urge is to help, aid, assist any other member of the community who needs what we may have to offer: advice, knowledge, materials, other links we may have to services not available—the list is endless. The only condition I have ever known a true ham to place on rendering assistance was this: NOT that the recipient repay, but rather that the recipient be prepared to assist some other who may someday need what can be rendered.

Both of these twin urges make calling "CQ" more meaningful, for we may never know in advance whether we might receive a reply that either helps our score or gives us an opportunity to help someone else.

I personally believe that the most mature reason for calling "CQ" is the chance to be of assistance, even if that is only to give another the pleasure of a QSO, but more if the one who replies needs more than a chat. That is why I maintain my web site—it is one way in which I can help those in our community of hams who may need what is there.

There are, I am sure, those who would like to invert my remarks by leaning too heavily on the idea of being alone and seeing the "CQ" as a way to merely relieve loneliness. But I think one can only make this move at the expense of ignoring the initial sense of wonder and the more mature and thoughtful dimensions of being a ham and calling "CQ." It is at root not a demand for an answer, but an invitation to communicate, and that communication is a sharing. Sometimes we share only perfunctory data; sometimes we share news, information and ideas; sometimes we share joys and successes; and sometimes we share needs and solutions. In short, we share all that makes us a community, although not too much at any one time. Granted, some few may make "CQ" into a demand for reply, or even into a desparate plea for a reply, but for most, it is an invitation and a question: How can I assist?

I do not know if this is responsive to your question, but it is how I think about "CQ." In fact, over my 45 years as a ham, I have not too often called "CQ" myself (except to see of a quiet band had any listeners). Instead, I have tended to listen for "CQs" and replied to them. Listening is also a way of being ready to serve.

VHF-UHF

AN EXPANDING WORLD

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All times are in UTC.

Leonids!

Every year the Leonids meteor shower provides one of the better opportunities to work meteor scatter on 50 & 144 MHz. With the promise of the best Meteor Shower for 50 years close on 40 VK and a number of ZL 50 & 144 MHz stations got up early on Monday the 19th of November to be rewarded over a period of several hours. VK1, 2, 3, 4, 5 & 7 as well as ZL/YJ8 participated I have selected just a few reports from different regions to give some view of the dynamics of the openings.

Alan VK4BKM reports ... Just spoke to Stuart YJ8UU on HF. He worked Trevor VK4AFL this morning (19/11/01) on 144.1, also heard a VK2 but couldn't get the callsign. He heard voices in the noise with his beam towards ZL. ...Alan VK4BKM

Doug VK3UM reports ... we, in VK, rarely see anything like the effect of a meteor shower as is seen in the Northern Hemisphere. At best, we are lucky to realise 25% of what is experienced in the Northern Hemisphere. Many if not all-most meteor showers have little effect down under!

Today (19/11/01) it was different! Predicted to peak between 1700 - 1800 UTC (0400 - 0500 local) the experts seemingly got it right. Visually speaking, we were blessed with a clear crisp sky, and from this QTH with its 360° views, the display was brilliant. Not the 1000's per hour that you read about but at its peak, we were seeing approximately 2 extremely bright trails in a 5 second period. Some of the trails were clearly visible for several minutes.

Radio wise some bursts went for up to 6 minutes. VK participation was very good given our population. From this QTH I worked 31 stations in VK1, VK2, VK3, VK4, VK5 and VK7 (all SSB on 144) and included the following VK2DVZ, VK1VP, VK4TZL, VK4AFL, VK2TQP, VK2EI, VK4LC, VK4OE, VK2FLR, VK4BLK, VK2KU, VK4FNQ, VK2EM, VK4KZR, VK5NY, VK5KK, VK5RO, VK5ZDK, VK7MO, VK2TP, VK4AQL, VK2MP, VK4AML, VK4QV, VK2BIG, VK2ZCV, VK2ZWM, VK2DXP, VK2BRG, VK2DXE, VK2GFY.

I have heard of an unconfirmed report that VK2 - ZL worked but they were not heard in VK3. No VK6's were heard in the Eastern States nor was a VK8 active. Aurora was evident for a _ hour or so just before our local dawn ... Doug VK3UM.

Neil VK2EI reports ... fairly productive morning here, even with the "late" start at 0355K! Stations worked on 144 MHz: VK2: EM, KU, MP, AMI, BRG, BJM, DVZ, DXE, GFY, ZAB, 3DTV/P2 VK3: HY, UM, YB, AEF, AKK, AXH, BDL, CAT, DEP, DMP, DUT, GRL, JEG, KAI, KEG, KEM, MIQ, XDQ, XPD, WRE, VK4: AFL, AJS, AML, BLK, TZL, VK5: GN, KK, NY, ZBK, VK7: JG, MO, & ZL1IU. The most consistent stations here were VK5NY, VK5KK & VK7MO. The VK4's were not as strong but consistent. Running 60 W to 9els about 2m above roof level. Majority of contacts with the beam 230° true. Last stray contact here at 2327Z. Great while it lasted!! ... Neil VK2EI QF68km.

Nick ZL1IU reports ... Here is my list of stations worked on 144.100 MHz VK2ZAB @1641z, VK2KU @1648z, VK2DVZ @ 1648z, VK2EI @1711z & VK4AFL @1713z. Unfortunately had to go to work at 1735z so may have missed a few. Never mind...All good fun!! ...Nick ZL1IU

Tony VK3CAT, who worked both 50 MHz & 144 Mhz (14 stations) reports ... did any one notice the band noise? On 2 metres it sounded like heavy raindrops on the roof, no it wasn't raining! The 46.178MHz video carrier had pings that sounded like bullets passing by. (Have .wav file of this). 2 metre contacts had between 144.100 & 144.140MHz, was able to QSY on longer bursts. I thought things went pretty well - nothing like an HF EU pile up working P5 or a 6-metre F2 opening. .. Tony VK3CAT

Glenn VK4TZL reports contacts with the following on 144 MHz...VK2KU, VK1VP, VK3UM, VK3KEG, VK3EK, VK3AXH, VK3FIQ, VK3YY, VK2ZAB, VK7MO, VK2FLR, VK3XPD, VK3TMP, VK1ZQR, VK2MP, VK3GRL, VK3AF, VK7JG, VK2TP, VK5NY, VK2DVZ, VK3KAI, VK3CAT, VK5ZBK, VK3DUP, VK2EI, VK5KK, VK3TDV, VK3AEF, VK3DMP, VK5KK Again, VK3BDL, VK2TQP, VK2DXE, VK3FND, VK3KWA, VK3CSJ, VK2DVZ, VK2ZCV, VK2BXT..Glenn VK4TZL

Rex, VK7MO, reports Contacts with the following on 144 MHz ...VK2KU, VK2DVZ, VK2EI, VK1VP, VK3AXH, VK3XPD, VK4AFL, VK4TZL (On WSJT), VK2TP, VK3UM, VK5NY, and VK5KK, VK5ZBK, VK1ZQR, VK3KEG. I copied VK2EI and VK2DVZ on numerous occasions and VK2KU to a lesser extent - suggesting that 1200 to 1500 kms is indeed the optimum distance. It will be interesting to try fast hell and WSJT over this distance in non-shower conditions ...Rex, VK7MO

Meanwhile back in Adelaide, VK5KK worked 22 stations (VK1, 2, 3, 4, 5 & 7) on 144 MHz from 1730 – 2000Z. VK5NY, VK5RO & VK5ZBK well and truly amongst it working many of the same stations plus more. The only reasons things seem to go quiet towards 2000Z was because most had to go to work or had worked everyone left!

144 MHz and Above ... Tropo

Colin VK5DK reports ... well it has finally happened; I managed to work Wally VK6WG tonight 13/11/2001 on 144 & 432. I heard the VK6REP beacon which was peaking to S7, Rang Bill VK6AS, but he hasn't any antennas in the air at present, so I rang Wally and managed a good S9 contact on 144, tried

432 and had a contact but signals from Wally were only peaking to S3, got a S1 signal report back with Wally's scotch "S" meter. 144MHz contact at 1023 UTC & 432 MHz contact at 1045 UTC. First VK6 for 2 seasons from this QTH. I believe Steve VK5ZBK may also have worked Wally this season as well, within the last couple of weeks. Russell VK3ZQB also worked Wally later the same night.

Thanks very much for the Email with the details for the Qualcomm PLL. Very much appreciated.

Charlie VK3FMD has just had a contact with Wally at 1230 UTC on 144 and are now trying 432 ... 73s Colin VK5DK

Bill VK6AS is currently off the air but hopes to be back on by around Christmas. Lets hope so too!

David VK3AUU reported hearing, on a halo, the following beacons, VK5RSE, VK5VF and VK7RAE on 2 metres on the morning of the 14/11/2001. By next month we should be right amongst the Tropo season!

WSJT

The following text on WSJT was written by Rex VK7MO as an answer to questions posed by Dale VK5AFO. It is a good start for anyone interested in WSJT, so it has been reproduced here! * Power level: 100 watts is desirable although signals have been seen at 10 watts *Antenna gain is probably not a significant factor as the gain of high gain antennas is compensated by the fact that less of the sky is covered. Something around a single 5 to 10 element yagi seems best. Signals have been seen from VK4 by VK3AUU using a hallo. *Operating Procedures: We are using 30 seconds TX/RX period. Otherwise use the procedures in the WSJT manual. *Frequency: We use 144.130. It does not matter if other stations use this also as the signals rarely over-lap and the more on the one frequency the better chance of seeing something. On six meters we use 50.145. If you have six meters this is much easier to get up and running at first - a three-element beam and 100 watts will work well.

- Skeds: During weekdays VK3AXH and VK7MO conduct tests from 0645 EDST to 0715 EDST. VK3AXH TX's for the first 30 seconds and VK7MO for the second. On weekends the tests are 0600 to 0700 EDST. Weekend tests are aimed at VK4 with the Southern stations transmitting for the first 30 seconds of each minute and the Northern stations for the second. Some tests are conducted with fast hell so watch 7085 to find out what is being used.
- Liaison: 40 metres 7085 is used for liaison. We set up tests and check results after each try. Should anyone like to conduct tests, WSJT, please contact Rex VK7MO in the first instance to arrange Skeds.

Six Metres Equinox #2 Y2001

At least one opening has occurred to South East VK5 and VK3 during the period of 29 – 31st of October 2001. The following reports from VK4 give some impression of this equinox recovering from a slow start.

Ray VK4BLK reports ...Just returned from holidays in Cairns in time to catch some good DX. 28/10/01 0806-1008 33 contacts from ES, LY, OK, OM, OH, OH0, RA, S59, SP, UR, YU &YL 30/10/01 0012-0128 13 W5's & 1 XE, 0940-1029 14 contacts from S59, ON, F & DL. 31/10/01 0608-1058 17 contacts from UR, 9A, SP, G & GW., 2/11/01 0041 ZK1NCP 55 55 2/11/01 0205-0324 3W6s ,1W5& 1XE, 2/11/01 0739-0937 9 contacts from DL, LY, G, GW & PA 3/11/01 0008 D44TD 55 55 (Cape Verde Islands) Loc.HK86 long path QSO.

On Sunday 18/11/2001 we had a great opening to North America. 18/11 0122-0235 worked 51 W's, 9 VE's and 5 KL7's nearly all on SSB with strong signals!!! ...Best 73 RAY VK4BLK.

Ron VK4BRG reports ... though not equaling John, VK4FNQ's opening a couple of days ago, it was pleasing to have an excellent opening last night. 31 Oct. .. also of long duration 0700 to 0934 UTC. .. managed to work 38 stations for 6 new countries. Lots of strong signals .. up to S9, though average S 6 to 7. I (Italy) x 2, YO x 2, Ux (Ukraine) x 5, F x 1, G x 19, OK x 2, LZ x 1, YU x 2, 9A x 2, ON x 2 ... Ron, VK4BRG.

John VK4FNQ has provided a complete DAILY report on 50 MHz DX heard and worked from his QTH via email, for several years now. It is without doubt, one of the most authoritive 50 MHz band logs around! The following is John's log for 31 Oct 2001 0555 UT5JCW KN64, 0557 UT5JAJ KN64, 0600 US5QGL, 0608 LZ2EV, 0612 LZ1JH, 0613 UR7GG, 0623 UY5HF KN66, 0626 YU1EU KN04DW, 0628 UT7GA KN66, 0631 IT9RZR KN18, 0631 UU1JD, 0633 LZ5UV KN12 0633 UR5GK KN66KC, 0635 UR7QR, 0636 UX0FF KN45, 0638 UU1JD KN65, 0639 IW7DVZ JN71, 0643 LZ1RB KN22, 0644 LZ1QE, 0646 SV7BOT KN21PD, 0649 LZ1JH, 0700 IW9DCN, 0715 LZ/OMITF, 0717 LZ3RX KN12, 0743 YO4CIS KN43, 0810 IW9BDV, 0812 SV7BOT, 0813 IG9/I2ADN JM65, 0821 LZ2HM KN12QP, 0839 LZ2YL, 0841 LZ2EU, 0916 9A8W, 1033 G4ASR IO81 ... Good luck and DX fm John VK4FNQ QG39EX

2001 Microwave "Update" Convention

This year's 16th Annual Microwave Update was held at the Four Points Sheraton Hotel in Sunnyvale, California. Sunnyvale lived up to its name, as it was glorious sunshine and high temperatures throughout the Update weekend. Well over 100 amateur Microwavers from all parts of the world, Australia, Japan, UK, Germany, Canada and the USA, attended these immensely enjoyable and rewarding few days. "MUD", as we now call the event, has become an annual pilgrimage for many Microwavers. An extra attraction was the incredible collection of surplus equipment for sale at the Update.

Next year's event will be held in New England, USA. For more information on the 2001 update visit G3PHO's website at http://www.g3pho.free-online.co.uk/microwaves/index.htm

Earth Moon Earth

Doug VK3UM reports ... here is a copy of my 432 EME log for the contest! I ended up with 70 QSO's and 30 multipliers, which is not too bad for the 15 hours of total operation. Should put me into the top 10 or even higher ... but that is not the point really. Signals with the dish make it so much easier and it was rare that I had to ask for a repeat call or 'scratch into the noise'. Worked many small stations (2 yagi 500 watt) as it turned out with out knowing it at the time.

All random of course .. no Skeds! Our limited window becomes the telling factor and keeping up a 4 minute per QSO average rate into Europe is the limiting factor. USA activity was not

great either. After this weekend, I have now passed the 250-station mark! ... 73's Doug VK3UM

Microwave Primer Part Nineteen: Basic ATV above 1200 MHz.

Before I go on, it has been tossed around for a while that perhaps ATV has a big enough following to have its own small segment in AR? Well if anyone is interested here is your chance. Last months column has got quite a few positive comments from a group who haven't been supported in national AR press for sometime. From what I can see ATV is quite well supported around the country in numbers that are similar to the more traditional "VHF/UHF" pursuits so it begs for a column!! This month I will briefly go over the first steps to take to get going on FM TV.

The 1240- 1300 MHz is the easiest band to start on. Two channels are available, 1250 MHz & 1280 MHz. The receiver part is easy; just get hold of an Analogue Satellite receiver. These units typically tune from 950 – 2000 MHz and have selectable sound carrier frequencies as well as IF bandwidth and a number of other functions that can be used. Some of these receivers are virtually being given away for $20 - $50! These receivers were never designed to be used for direct connection to an antenna. Most provide 13 – 18 Volts up the coax to power the C or K band Down converter. The equivalent noise figure of the units varies from 3 – 15 db .. most newer ones aren't too bad actually.

Now you can directly connect an antenna to the satellite receiver but if your antenna has a DC grounded feed, the voltage intended to feed the down converter will be shorted to ground. Most satellite units current limit at around 250mA so they don't self-destruct, but it isn't too hard to add an inline DC blocking cap. The more complete solution is to add a single stage Gasfet in front of the receiver .. you guessed it simply power it up the coax!

For most amateur FM TV working, a bandwidth of 18 MHz is used. This is somewhat narrower than the DBS satellite standard for 27 MHz bandwidth. An 18MHz signal on a 27 Mhz wide receiver has only a slightly inferior signal to noise ratio once you compensate for the lower than standard video output. On most newer receivers, you can select between 15 & 27 MHz bandwidth. 15 MHz gives you a few extra db of S/N over 27 MHz on a typical FM ATV signal.

For higher bands, converters have been developed to convert down to the 950-2000 tuning range. So far 2.4, 5.7 & 10.3 GHz have been used in VK with 3.3 GHz being the next band to be designed for.

Transmitting on 1240 – 1300 MHz isn't that much more complex. With careful building you can make a simple transmitter that is essentially a free running VCO driving a number of amplifier stages. The stability required of + or - 100 kHz accuracy is not too challenging. Video is fed via a 75uS pre-emphasis circuit to a simple modulator (a varicap diode). The sound carrier is fed at the same point at your favourite sound carrier frequency (see further). The secret to a good linear modulated signal is simplicity in the video chain. The VCO is calibrated to its most linear swing range by running triangle wave or just charting volts vs. frequency across the VCO's range! PLL's have been developed to lock the VCO; this is a more complete answer as it provides ease of QSY as well as accurate frequency read-out. For transmitters running under 1-watt, a free running oscillator is probably OK. For 10-watt transmitters PLL control is perhaps a more responsible approach! Simple designs exist using just a few active components to get 50mW see the Minikits website address below for more details.

Higher bands typically use the same exciter running around 1100MHz through a multiplier. For 2.4 GHz that's times two, 3 GHz times three, etc. Once you start multiplying you have little choice but to PLL the VCO otherwise become a potential interference risk. A number of multipliers using PCB and or Pipecap filters and ERA MMIC's have been designed. These provide about around 10mW, enough to drive the conventional Gasfet PA's used for narrowband work.

I mentioned "your favourite sound carrier frequency". Once upon a time 5.5MHz was used as a standard for FM as it made "sense". But you aren't using an AM receiver stuck on 5.5 MHz anymore! Instead a multistandard satellite receiver that can be used on any one or two simultaneous sound carrier frequencies from 5.5 – 8 MHz!!

5.5 MHz was always a bother to use, as the residual 5.5 MHz component in the video signal is hard to get rid of in a +5MHz video bandwidth system. If you feed this video back into another transmitter (i.e. a translator) this residual 5.5 MHz signal can beat with the new 5.5 MHz carrier putting beat lines on the picture. Now you can use 6.5 MHz or higher or pick two different carriers for translators as a solution. Or you play around with two channel audio, stereo or data/audio links

It might seem a little obscure diverging to FM ATV in this series but maybe it isn't. Sure it isn't weak signal work but it is a wide-open area for those who do want to homebrew "wideband" UHF & above equipment. All the amplifiers and antenna's are the same. So what do you do with all your narrowband gear during the winter DX drought? Well at least a few of us keep using the gear on ATV. It's a good proving ground with a growing number of amateurs gaining microwave experience that can only benefit future pursuits.

Next month we are going to talk about where to source components and "trickets" for microwave use.

For more info of ATV kits visit http://homepages.picknowl.com.au/vk5eme/minikits/kits1.html

In closing

We have lifted out of the winter "doldrums" with resurgence! In discussions, with a few operators of late, there seems to be growth occurring in a number of areas. One such comment was the surprise to see a number of Adelaide stations on 144 MHz SSB during the recent Leonids shower ... point taken!

The importance of the "mentor" in helping others get on air or promoting VHF, UHF and above (that's EVERYTHING above 50 MHz guys) is rarely acknowledged. The vision and patience of these individuals are the good parts of the hobby that should be supported, far more worthy than those who detract. In 2002 I will be re-introducing the "Meet the Man" series. This will be a monthly sidebar featuring Amateurs who have made a mark on 50 MHz and above. I am accepting nominations and material from the time you read this!

I'll leave you with this thought, ... "Wit has truth in it: wise cracking is simply calisthenics with words!"

73s David VK5KK

Education Notes

Brenda M Edmonds, VK3KT
PO Box 445,
Blackburn VIC 3130.

Exam changes

Many of you will have heard something of the proposed review of the WIA Exam Service. The ACA has recently commissioned an audit of the examination procedures, with particular attention to the machinery in place to deal with possible fraud attempts. Procedures currently in use for fraud detection have been developed over the years, but it seems timely to reconsider all aspects of the examination process and make a few changes administratively as well.

Up until now the WIA Exam Service has operated as a self-contained unit as part of the Federal Office. To reduce the load on this Office, it is now intended to involve the Divisions directly in the recruiting and registering of examination invigilators.

All current examiners will be contacted shortly to see if they wish to continue as invigilators, and will be informed of the changes to the registration processes. Again to reduce the administrative workload, invigilators are asked to form local groups, with the Group Leader being the person who maintains contact with the Division and the Federal Office. Any persons not currently registered who wish to become invigilators are advised to contact their local WIA Division for further information. Supply of examination materials, marking of papers and processing of examination results will continue to be the responsibility of the Federal Office.

As the re-registrations and new appointments will take significant time, WIA Exam Service will close from 21st December until 1st March 2002. It is anticipated that all examination papers returned by 10th December will be processed and the results posted before the Office closes. Although the Office will be staffed during February, we have asked that orders for examinations during February be delayed so that full attention can be given to finalising the new arrangements.

We have still not received any information from the ACA as to the decisions resulting from their discussion paper on further devolvement. It was hoped that any changes resulting from ACA decisions could be incorporated into the modifications of the examination arrangements, but it now seems more important to go ahead with the changes at a time of the year when examination demand is very low than to wait to incorporate other changes and have to close the service during mid-year.

We still hope to be able to start work very soon on extending the bank from which papers are produced and on revision of the existing syllabuses. Members will be kept informed through these columns as to any developments. I have previously mentioned that we would like to bring the syllabuses more into line with current technology. I welcome any comments on this matter.

My best wishes to members and clubs for a happy and peaceful Christmas and a productive, successful 2002.

Silent Key

George Stanley Schulze (1920-2001) VK2GX

George did his final radio training at the Marconi School of Wireless and in 1940 joined AWA and was appointed as a Radio Officer in the Australian Merchant Navy. He served on five ships, two of which were sunk and all subject of enemy attack. His involvement included transporting troops to Darwin and Singapore; landing commando forces at Kavieng, transporting the Free French Battalion from Noumea to Sydney for training, and landing infantry in Timor.

His favourite ship was the Zealandia, which was being escorted by HMAS Sydney just before it (the Sydney) was sunk off the West Australian coast.. His service aboard the Zealandia led to his participation in the recent Federal Government enquiry into the sinking of HMAS Sydney. Sadly, he was aboard the Zealandia, which was sunk in the raid on Darwin.

After three years at sea, George became an instructor at AWA's Marconi School of Wireless. He stayed with AWA for the rest of his working life. At the end of the war he transferred to the Aviation Department (Radio) at Mascot Airport, subsequently becoming Maintenance Manager and with the responsibility of all AWA service depots worldwide.

After his time in Aviation, the Commonwealth Government requested he move to Malaysia for two years as part of the Colombo Plan, where he became advisor and instructor of International Communications with the Malaysian Telecom Department.

Upon his return to Australia, George took on the role of Export Manager for fourteen years, which took him to many places including Africa, the Middle East, Asia and South and Central America.

In 1977 George was appointed assistant to the Managing Director of AWA where he spent the final six years of his working life. He had continued his interest in radio and was active on the amateur bands up to the last weeks of his life. Two years ago George received a WIA award for fifty years service to Amateur Radio.

His generosity and willingness to assist, together with his knowledge, wisdom and achievements has been an inspiration to all with whom he came in contact. Among those at his Service were representatives from AWA and the Merchant Navy.

Our thoughts are with his wife, Peggy and family.

Ted Miles VK2FLB, and James Iliffe (nephew).

HF Predictions

by Evan Jarman VK3ANI
34 Alandale Court Blackburn Vic 3130

These graphs show the predicted diurnal variation of key frequencies for the nominated circuits.
These frequencies as identified in the legend are:-

- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

Shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when usable. The path, propagation mode and Australian terminal bearing are also given for each circuit.
These predictions were made with the Ionospheric Prediction Service program: ASAPS Version 4

December 2001
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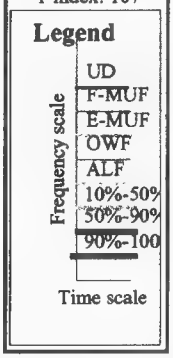
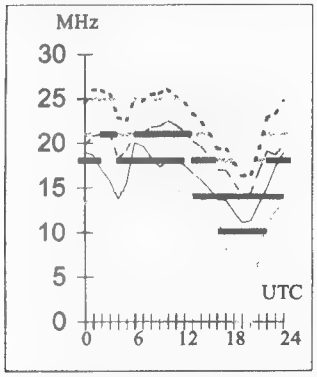
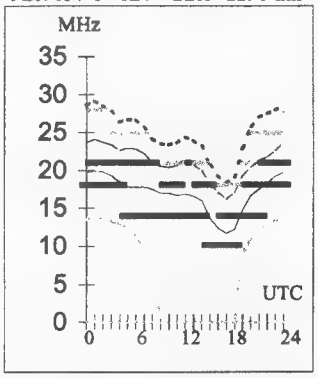


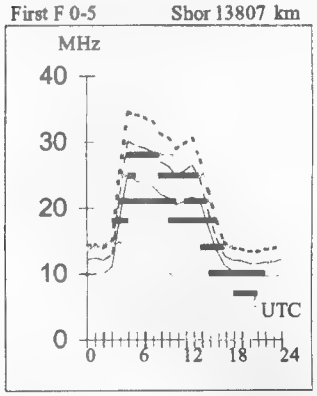
Adelaide-Accra ##
First F 0-5 Shor 14682 km



Brisbane-Auckland ##
First 1F7-14 1E0 Shor 2291 km



Adelaide-Moscow ##
First F 0-5 Shor 13807 km



Brisbane-London ##
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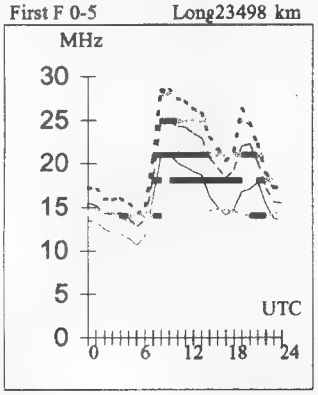
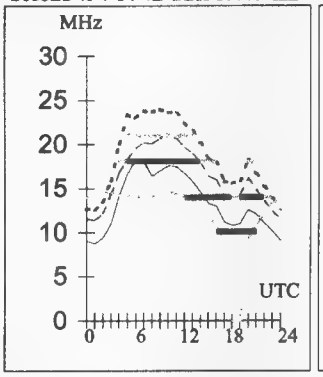
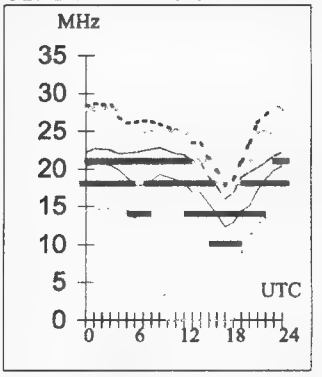


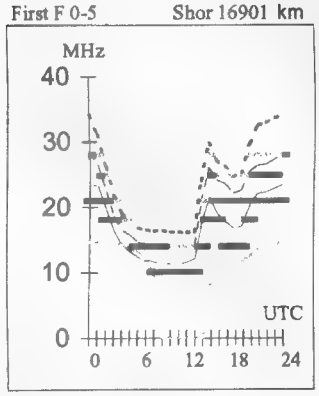
Canberra-Capetown ##
Second 4F4-14 4E(Shor 10779 km



Darwin-Invercargil ##
First 2F5-12 2E0 Shor 5159 km



Adelaide-Ottawa 58
First F 0-5 Shor 16901 km



Brisbane-London ##
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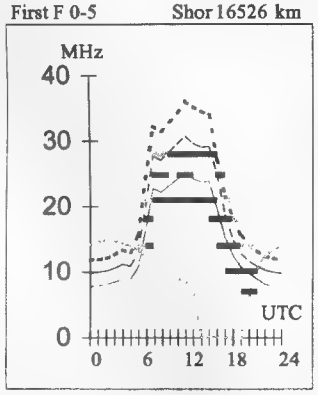
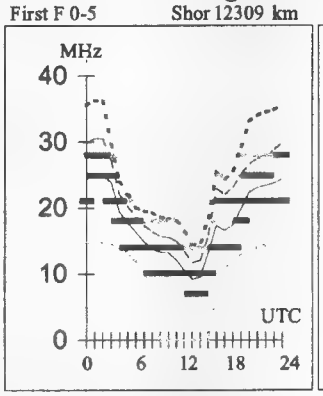


Canberra-Los Angele 62
First F 0-5 Shor 12309 km



Darwin-Paris ##
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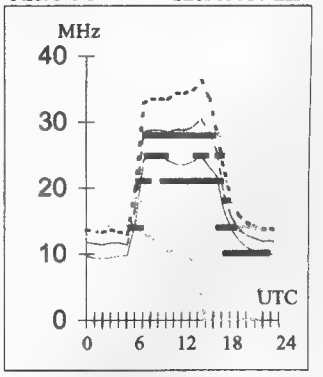

Adelaide-Vancouver 49
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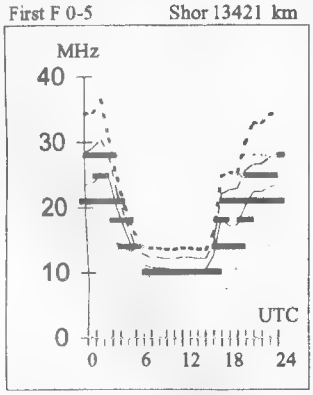
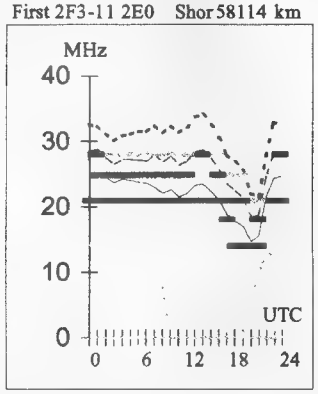


Brisbane-Manila ##
First 2F3-11 2E0 Shor 58114 km



Canberra-Wellington ##
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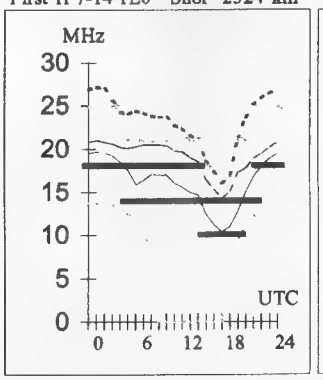
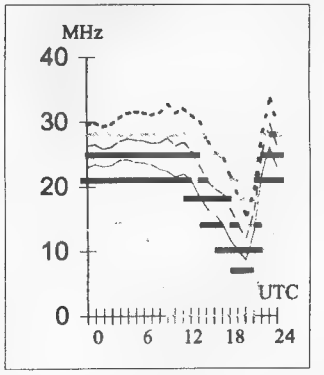
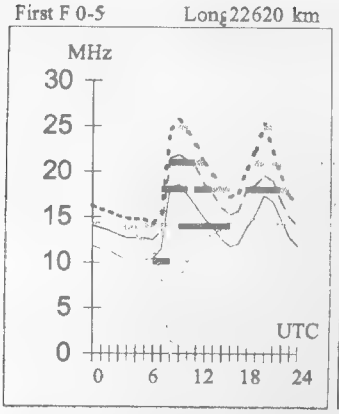


Darwin-Tokyo 10
First 2F4-11 2E0 Shor 5436 km



Hobart-London ##
First F 0-5 Long 22620 km



Melbourne-Lusaka ##
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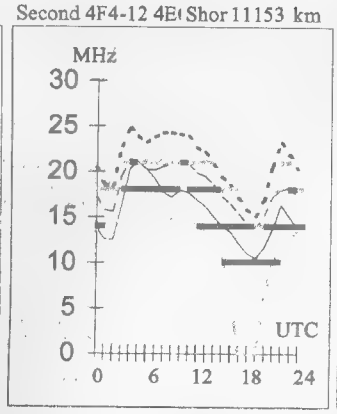

Perth-Johannesburg ##
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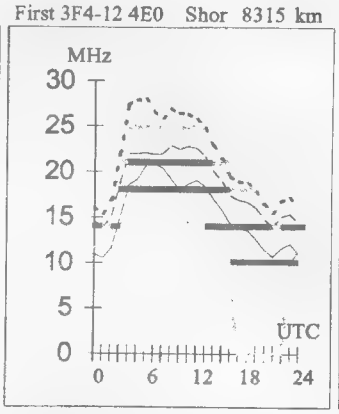
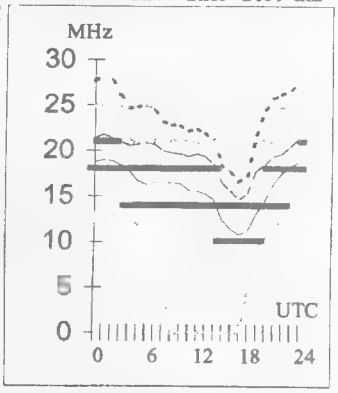


Sydney-Auckland ##
First 1F8-15 1E0 Shor 2159 km



Hobart-London ##
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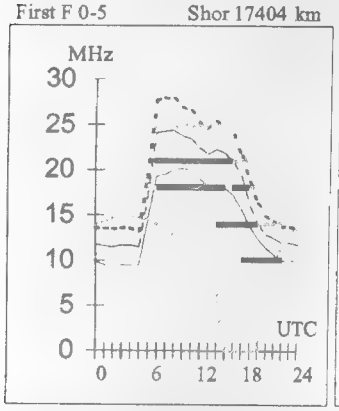

Melbourne-Miami 94
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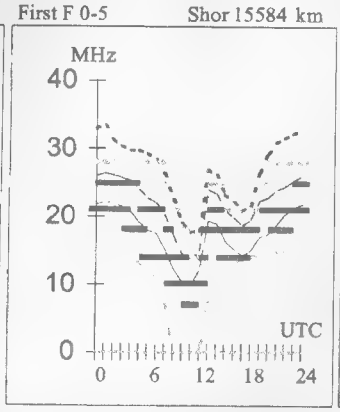

Perth-Rio de Janeiro ##
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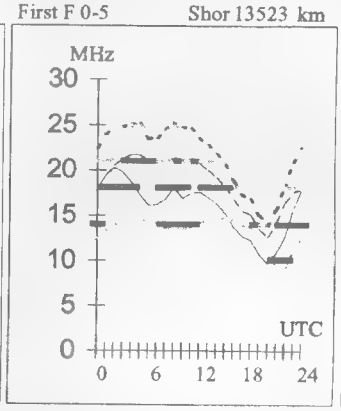

Sydney-Barbados ##
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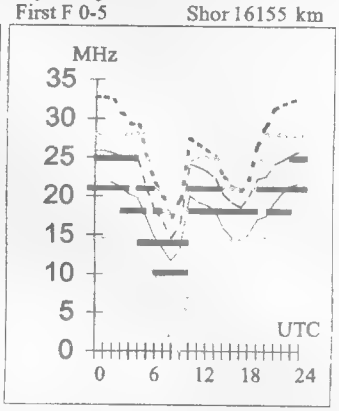
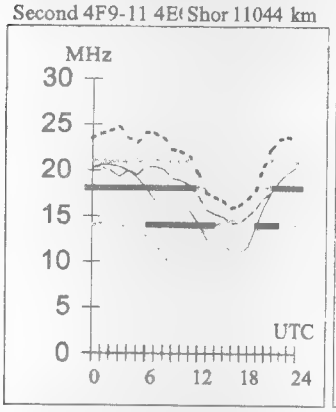


Hobart-Montevideo ##
Second 4F9-11 4E(Shor 11044 km



Melbourne-Nairobi ##
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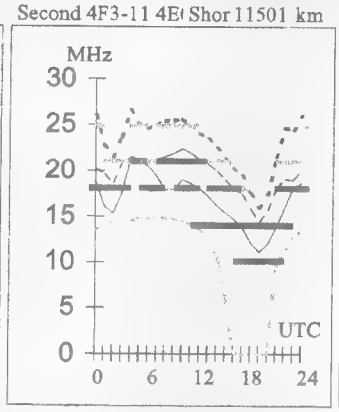

Perth-Rome ##
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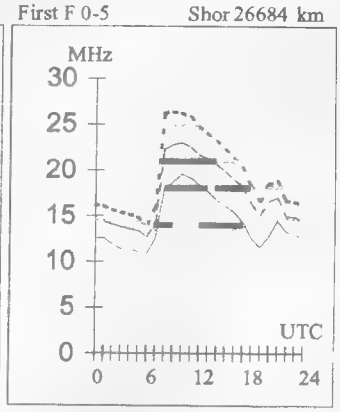
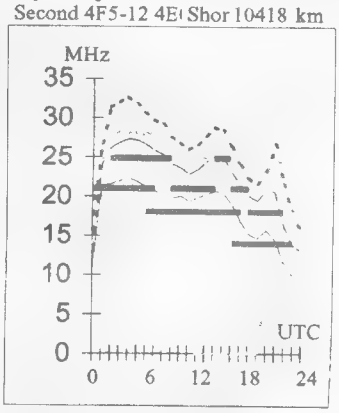
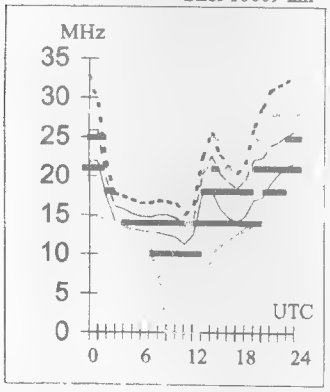


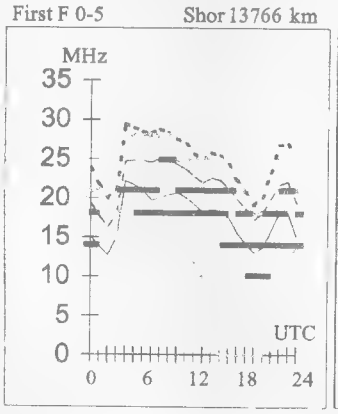
Sydney-New Delh ##
Second 4F5-12 4E(Shor 10418 km



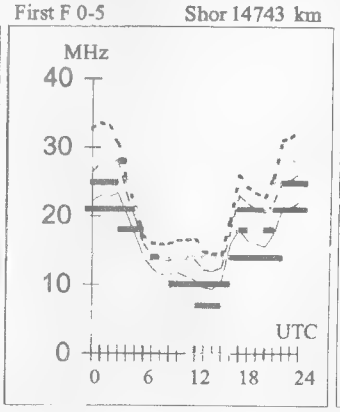
Hobart-New York 80
First F 0-5 Shor 16609 km



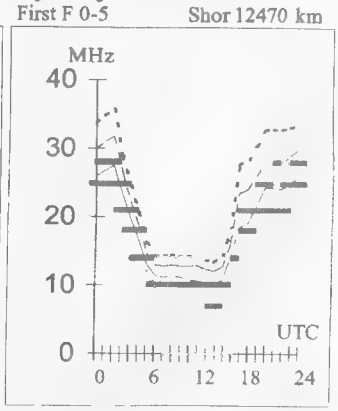
Melbourne-Tel Aviv ##
First F 0-5 Shor 13766 km



Perth-San Francisco 66
First F 0-5 Shor 14743 km



Sydney-Seattle 47
First F 0-5 Shor 12470 km



HAMADS

- Hamads may be submitted by email or on the form on the reverse of your current Amateur Radio address flysheet. Please print carefully, especially where case or numerals are critical.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at $25.00 for four lines (twenty words), plus $2.25 per line (or part thereof), with a minimum charge of $25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of Amateur Radio, at:

Email: *newsletters@ozemail.com.au* **Fax:** *03 9756 7031*
Postal: *Newsletters Unlimited, PO Box 431, Monbulk Vic 3793*

Please send your Hamad by ONE method only (email preferred)

FOR SALE NSW

• **ICOM 706 Mk2**, books, box, ex condx, SN 01120, $1650. **KDK FM-2016A**, 2m tcvr SN5582 book ex cond $150. Geoff VK2BGP Phone 02 4982 9748

• **GELOSO: tuning dial scale**, lens and escutcheon only, showing 10 through 80m frequencies, bandspread. As new. Brian, VK2GCE, Phone 02 9545 2650 or (preferred) brianclarke@telstra.easymail.com.au

• **COMMAND SCR-274N**: Rxs, Txs, modulators, racks, mounts, remotes, some complete setups as used in WWII operations. Brian, VK2GCE, Phone 02 9545 2650 or (preferred) brianclarke@telstra.easymail.com.au

• **CROs TEK 585A and 547**, with single, dual and quad channel plug-ins. Manuals also available. All items in excellent working order. Brian VK2GCE, Phone 02 9545 2650 or (preferred) brianclarke@telstra.easymail.com.au

• **Sweep Generator 2-250 MHz Leader LSW-250 SWEMAR** $350; **FET VOM Trio VT-108** $30; **Oscilloscope Trio CS-1560** two channel Serial Number 240017 $120. Alex VK2LB, QTHR. Phone 02 9808 1031, alexford@ozemail.com.au.

• **KENWOOD TS 700 SP** 2m AM, CW, SSB, FM Tcvr VFO operated. Bulky old fashion mode. 1W 10W output + 12 xtal sockets for fixed freq. VGC $420 ono. **Light weight antenna rotator** + control box, as new $80. Peter VK2BPO QTHR Phone 02 9713 1831 brunone@bigfoot.com

WANTED NSW

• **Yaesu FRG 9600 instruction manual** or photo copy. Costs repaid. Art VK2AS QTHR Phone 02 94167 784l

• **High frequency transceiver**, valve or solid state, working or not, for pensioner wanting to become active on air again! Anything considered, even old AM transmit/receive equipment. Must be inexpensive, or one that, with work, I might be able to get going. Not working, desk or old **dynamic microphone** sought also. Please contact: Norm VK2ZG QTHR, Phone: 02 4965 7923 or email normvk2za@optusnet.com.au

• **3x80 metre helical whips** for use at Urunga Convention. B. Slarke VK2ZCQ, P O Box 8, Bellingen NSW 2454, Phone 02 6655 1115

FOR SALE VIC

• **KENWOOD TS50 HF** SN 50800819 as new $1100. **Antenna Tuner HC500 Tokyo Hy-Power** $65. **Coax switch 'Trak'** 1kW 6-pos, $50. **Electrolytic caps** 200µF 450V @ $2. All types transformers, loudspeakers outside/inside. **Valves 12BY7s 6164Bs** etc. **Loudspeakers** 12" woofers alarm external speakers. Harry VK3AXJ QTHR Phone 03 9802 5704

• **YAESU FT101E** SN 351917 with service manual and **Osker SWR-200 meter** $400. **Emotator 502cxx rotator** and **TH3JR** 3 element beam $500. One owner. All in excellent condition. Barry VK3JB QTR. Phone 03 9878 8275

• **COMMS Rx YAESU FRG-100** perf condition 50 kHz- 30 MHZ all mode (D2790) with keypad for freq entry and remote control $750. Len VK3BMY Phone 03 5862 3116 all hours

• **YAESU FT23R** 5 watt 2m transceiver in as-new condition including **FNB-7 600mA NICAD**, charger plug-pack, soft protective cover, user manual and original antenna. Owned since new. $290 ORO Victor VK3CKD Phone 0427 561 570.

• **YAESU FT707** HF 100 watt transceiver complete with **FV707DM** digital VFO, **FTV707** transverter with 6m & 2m plug-ins and manuals. Comprehensive portable HF & VHF station and if you can find the 432MHz plug-in will give you an SSB rig from 80m to 70cm. The FT707 transmits/receives SSB USB/LSB, AM & CW on the amateur bands 10, 12, 15, 17, 20, 30, 40 and 80 metres, 100 watts output max. Owned since new and in great working order. $850 ORO VK3CKD Phone0427 561 570.

• **APOLLO 40 Channel UHF CB** in good condition $175 ONO must sell. Contact Ian Phone 03 5751 1631 or lorian@netc.netc.au

WANTED VIC

• **1296 MHz Amp** as displayed at Ballarat field day in October. Would the person offering these for sale mind contacting Ian VK3AQU on Phone 03 5751 1631 AH or email: lorian@netc.net.au

FOR SALE QLD

• **YAESU FT101EE Tcvr** near new finals $300. **13.8V 4amp power supply** $30. **FL2100B HF amplifier** $450. **Heathkit SWR bridge** $40. **DSE 1/1 balun** $20. **Yaesu FIF232C CAT** computer control for Yaesu radios $80. Freight extra. Bernie VK4OZ QTHR Phone 07 5532 4078. 6 Truda Street, Southport 4215. Email: vk40z@winshop.com.au

• **KENWOOD TS-120V HF** Tx/Rx working with manual and mike $350. Peter Hadgraft, 17 Paxton St, Holland Park, Q4121 Phone 3397 3751 email peterhadgraft@yahoo.com

• **Deceased estate**: **YAESU FT 1000MP**, external speaker **SP-8**, desk microphone **MD-100**, headphones **YH77sta**, mint condition, original packaging, $3300. **Tiltover tower**, **Kenpro KR-400RC** rotator, **Cushcraft A3S** beam $500. **Power supply 13.8V 30A** $250. **Kenwood TM221A** 2m transceiver $100. Contact: Carsten VK4OA QTHR. Phone: 07 3264 6443. Mobile: 0419 966 111

WANTED QLD

• **Collins and Hallicrafters** brand radio communications equipment by avid collectors/restorers. Not for resale, but to display and use on AM Vintage Radio Nets. Accessories and spare parts also needed. John Abbott VK4SKY QTHR pukapan@yahoo.com or Phone 0417 410 503. PO Box 1166, Coolangatta, Queensland, 4225.

FOR SALE SA

• **RCI 2950** 10m rig $375. **FT8100** dual bander as new with separation kit $900 ono. **Uniden UH100** exc cond $300. **Kenwood TS520S** $250 ono. **Emtron EDM.1** dip meter exc cond $80. **MFJ-971** portable ant tuner $175 ono. Mark VK5KMK Phone 08 8836 7279

• **Amateur** Radio, Radio and Communications, Amateur Radio Action **Magazines**. Paul VK5MAP Phone 08 8651 2398. For details, or SASE to PO Box 76 Peterborough 5422 for list.

• Valves all are new and still in original packets: 2x**6JS6C** GW $50 each. 3x**6146B** Sylvania $40 each. Ring Leigh VK5UO Mt Gambier Phone 08 8725 9450

• **Deceased estate**: **KENWOOD TS180S** with operator's manual $500. **Fukner Commander rotator** with control box, power supply and spare rotator $100 (needs attention). Paul VK5MAP QTHR Phone 08 8651 2398

WANTED SA

• **Deltahet** (solid state) part complete, not working or chassis only, wanted for home brew project. Rob VK5RG Phone 08 8379 1889

• Early **EILCO/CODAN HF transceivers** such as **type 6104**. Also manuals for same. Malcolm Haskard VK5BA QTHR. Phone 08 8280 7192. Email malcolm.haskard@unisa.edu.au

FOR SALE WA

• **KENWOOD TS870 DSP** 160-10 m transceiver w/gen cov rx, ant tuner, memories, scan etc. mint condx, used very little. price $2990, VK6IP Phone/fax 08 9655 2250, email vk6ip@windspeed.net.au

WANTED WA

• **Variable air capacitors**, 6:1 reduction drive gears, integral drives, crystals for home constructor. PO Box 164, Greenbushes 6254 WA

FOR SALE TAS

Conditions of sale

1. All items are as is where is.

2. All prices are firm. No offers accepted

3. All items are to be paid for in cash upon pick up at 5a Helen St, Ulverstone.

2 only **ATN 11 Element 477MHz** UHF CB beam antennas with baluns, phasing harness and ATN power divider all N connectors and mounted on spreader bar $100.00 the lot.

1 only **Telereader CWR-670E** with manual all in good order,.$50.00.

2 only **Philips FM-900** Base unit radios with digital clock and power supply, programmed for 2m $150.00. each

1 only **PacComm TNC-320** with manual $100.00

1 only **MFJ Turbo packet radio controller**, model **MFJ 1270B**, brand new never used $100.00

1 only **ICOM IC-28A** 2m Transceiver with optional **HM-14 DTMF Microphone** and tone unit also mounting bracket, manual and box, as new condition S400.00 There is also a service manual available for this radio at an additional cost of $30.00

1 only **YAESU FT2311R 1.2GHz mobile transceiver** fitted with optional tone unit and comes with mounting bracket, manual and box mint condition $400.00

1 only Australian Military Forces **A510 Wireless Station** in very good condition and as far as I can tell is complete apart from the Morse Key, whereabouts unknown $300.00

2 only **microwave link units** ex hec, a trailer or ute required to pick these up $50.00 ea

1 only **ICOM IC-2800H service manual** on CD ROM, $30

Laptops

1 only **Toshiba T1900 Monochrome 486SX laptop computer** With 4Mb of RAM, 123Mb hard drive, very good condition $150.00

1 only **Toshiba T1910 monochrome 486sx laptop computer** with 4Mb of RAM, 123Mb hard drive, very good condition, $150.00

2 only **Toshiba T1950CS colour 486DX laptop computer** with 4Mb of RAM, 123Mb hard drive, very good condition $200.00.ea

1 only **Toshiba T1960CS colour 486DX laptop computer** with 4Mb of RAM, 123Mb hard drive, very good condition but no battery or power supply, "as is where is", $80.00.

1 only **IBM Thinkpad 750CS colour 486DX laptop** with 20Mb of RAM, 327Mb hard drive, running Win 95 plus MS Office, Easytrax, Tait Programmer and Logomanager for Nokia phones, a nice laptop but has no battery $300.00.

These laptops would be suitable for student use or controlling free Austar.

Service Manuals for Sale

1 only **Kenwood TH-78A/E**. 1 only Kenwood **TS-600**. 1 only Kenwood **TS-830S**. 1 only Kenwood **TS-930S**. 1 only Kenwood **TS-430S**. 1 only Kenwood **RZ-1**. 1 only Kenwood **TM-201/D**.1 only Kenwood **TW-410OA/E**. 1 only Kenwood **TS-140S/680S**. 1 only **Kenwood TS-450S/690S**. 1 only Kenwood **TS-850S**. 1 only Kenwood **TS-95OSDX**. 1 only **Alinco DR-605T/E/TEI/TE2**. 1 only Alinco **DJ-GIT/E**. 1 only Alinco **DJ-50OT/E.** 1 only **Yaesu FT-470**. 1 only Yaesu **FT-3000M**. 1 only Yaesu **FT-900**. 1 only Yaesu **FT-ONE**.

Instruction manuals

1 only **Kenwood TH-25A/TH-45A**. 1 only Kenwood **TH-751A/TH851A**. 1 only **Kenwood TS-700A.** 1 only Kenwood **TS-820S**. 1 only Kenwood **TS-180S**. 1 only **NECCQ-IIOEHF-SSB**. 1 only **Yaesu FT-200**. 1 only Yaesu **FT-980**. 1 only Yaesu **FT-757GX**. 1 only Yaesu **FT-ONE.** 1 only Yaesu **FC-301** antenna tuner. All manuals are $30.00 each regardless of type and size.

David VK7ZDJ Phone 03 6425 2030, 0413 219 680, vk7zdj@southcom.com.au

MISCELLANEOUS

• The WIA QSL Collection (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose Vic 3765, tel. (03) 9728 5350

TRADE ADS

FOR SALE ELECTRONIC VALVES

If you are looking for valves you can contact, Gamini Liyadipitiya at email: gamini@ee.unsw.edu.au Small negotiated fee — first come first served.

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HF, VHF, UHF Antennas & accessories. Alum towers, guides etc. Diamond VSWR/PWR meters. HD copper ant wire & insulators. TX tubes & pwr transistors. Quality coax cables & connectors. Free advice & catalogue. **ATN Antennas Ph 03 5492 2224 Fax 03 5492 2666, email atnant@ruralnet.net.au**

"Hey, Old Timer..."

If you have been licensed for more than 25 years you are invited to join the

Radio Amateurs Old Timers Club Australia

or if you have been licensed for **less than 25 but more than ten years**, you are invited to become an **Associate Member** of the RAOTC.

In either case a $2.50 joining fee plus $8.00 for one year or $15.00 for two years gets you two interesting OTN Journals a year plus good fellowship.

Write to

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3/237 Bluff Road
Sandringham VIC 3191

or call Arthur VK3VQ on **03 9598 4262** or Allan VK3AMD on **03 9570 4610**, for an application form.

Email your hamad

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You proof it, you retain control.

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a not-for-profit site that is a search engine for hams

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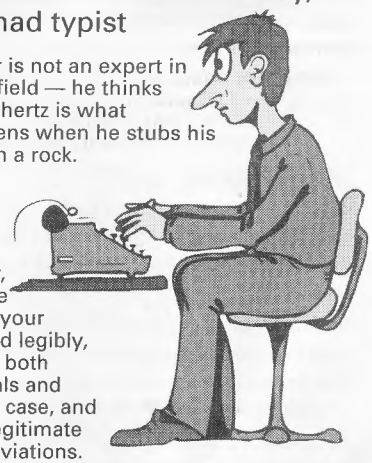
Meet Mr Oscar Goldenboy, our Hamad typist



Oscar is not an expert in your field — he thinks Megahertz is what happens when he stubs his toe on a rock.

To help Oscar, please write your hamad legibly, using both capitals and lower case, and use legitimate abbreviations.

This will reduce the chance of errors being published, which incoveniences everyone.

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Over to you

Note 1 Views expressed in letters are those of the authors and do not necessarily represent the policy of the WIA.
2. Some of the letters may be shortened to allow more letters to be published.

Entry Hurdles

So, we have a proposal from the WIA VK6 division for an "almost exam free licence" (AR, July 2001), the idea being to boost the numbers of amateur radio operators, presumably by further watering down technical standards. Hey, I can beat that! Why not do a sponsorship deal with Kellogg's, and give ham tickets away in every box of corn flakes? Or maybe Coca-Cola might come to the party-collect enough bottle tops and send them in for your ham ticket!

The VK6 proposal is advanced on the pretext of offering entry to our hobby to those "who are interested in radio but cannot spare the time to go regularly to evening classes to pass the current licence grades". No time for study, but they then suddenly find the time to operate, and progress through to higher grades?

Come on, anyone with a genuine interest in amateur radio wants to learn about the technology that drives it. Campers? Caravanners? Fine by me-so long as they have a genuine interest in amateur radio, and not merely attempting to get utility 2-way radio communication on the cheap. And if they have time for camping and caravanning, they must surely have time to study for a proper licence.

As for fed-up CBers: fed up with what? How would giving them a segment of our 70cm band help to "expand their horizons"? They already have a UHF band. If they have a real interest in radio technology they would easily pass the theory exam. All too often, the theory exam is presented as an obstacle, rather than a necessary endorsement of one's technical ability. Remember when Amateur Radio was defined as an experimental grade of licence? Now so many just want to "communicate", without much desire to understand how it all works, and consider the technical aspects to be irellevant.

The VK6 proposal suggests offering a slice of 70cm (with type-approved FM gear-now there's a challenge!), on the basis that it is under-utilised. But would populating this band with exiled Cbers and campers help its retention? Don't kid yourselves. If we want to hang on to our bands, we had better come up with more convincing reasons than that! Perhaps if we utilised our bands for serious experimentation and technical self-development, we might have a better argument.

We already have an adequate pathway into the hobby through the no-code novice licence. Would further watering down the standards really be in the interests of our hobby? If this idea gets up, how long before they lobby for more privileges?

We've seen it all before with the novice licence. Its original intention was as a limited-tenure introductory grade, with access to a small segment of a few HF bands and low power. But over the years, there's been a lot of "privilege creep".

When will people learn that pandering to mediocrity won't work? Imagine a football club hoping to recruit new players by changing the rules of the game to make it easier! Let's move the goal posts further apart to make goals easier to kick! Maybe remove them altogether so every kick's a winner! Yeah, right. That'll queue them up to join.

I advocate that we head in the opposite direction. Recruit for quality rather than quantity. Present the hobby as the technological challenge it can be, but one that requires a degree of determination and understanding to fully appreciate. A hobby with a proud history of technical and experimental excellence, that needs more young people to take up the challenges, develop their skills and pursue new ideas.

Or have we lost all the people with the insight and ability to articulate this notion? Perhaps it's just politically incorrect these days to express these sentiments.

I'll nail my colours to the mast now. If the WIA backs this proposal, I'm out-they'll have lost a member of over 20 years. I doubt I'll be alone.

Chas Gnaccarini
VK3BRZ 17 July 2001

MXHNY to all

The AR November article under the heading "C W and the Horses " by David Pilley is well wide of the mark and PMG Telegraphists never at any time transmitted a race event from inside a racecourse to a broadcast station where the broadcast was turned live.

The Chief Telegraph Office in Sydney (I cannot speak for the other cities) was a wonderful piece of organisation and it employed some of the smartest and the most intelligent people imaginable. As well as telegraphy skill there were other crafts too There were jewellers, photographers, and bootmakers, and there were money lenders and of course SP bookmakers. It was a very unique place to work and my 46-years with the PMG and Aust Post was certainly enriched because of my telegraphy days.

The Chief Telegraph Office Sydney - known affectionately as "the room " also had its poet - a well-known character named Frank Spruhan (RIP) who wrote the poem " Coming Round the Bend." (Abbreviated or "cut up" CRTB). Telegraph rules and -by-laws were strictly adhered to by administrators and required a certain number of telegrams be transmitted and received hourly. The number was based on the full and proper transmission of a telegrams content. Many but not all - telegraphists got around this rule, by using fairly uniform abbreviations, for example, the word *'that'* became " TT". *'you'* became "U", *'when'* became 'WEN", *'could'* became "CLD", *'congratulations'* became "CNGTNS". and a telegram that contained the greetings *'Merry Christmas and Happy New Year'* became "MXHNY".

Some Sydney telegraphists had mini-contests with the morse operators at the other end of the morse line. It was fun, I know, because I was in "the cutting-it-up-club."

And this was how and why Frank Spruhan - Spru to his Teleg mates, became motivated and wrote the poem " Coming Round the Bend ". The famous old poem is still a treasured piece of nostalgic trivia in the minds of many ex-telegraphists today.

The poetry as written in November's AR is almost spot on, and would give interested readers a brief idea of what " cutting it up " was all about.

Allan Madigan VK2OA

YAESU SUPER DEAL!

Yaesu FT-1000MP Mark V Deluxe HF Base Station

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The MARK-V FT-1000MP also features selectable receiver front-ends, High-stability Reference Oscillator, an internal high-power auto antenna tuner, two main antenna sockets, selectable tuning steps as small as 0.625Hz, dual-mode noise blankers, 500Hz and 6kHz IF filters, an RS-232C computer interface, plus easy digital mode interfacing. With so many new and improved features, why not ask for a copy of the 8 page colour brochure today to learn more about this amazing new transceiver.

D 3450

2 Year Warranty

$5990

SAVE $500!

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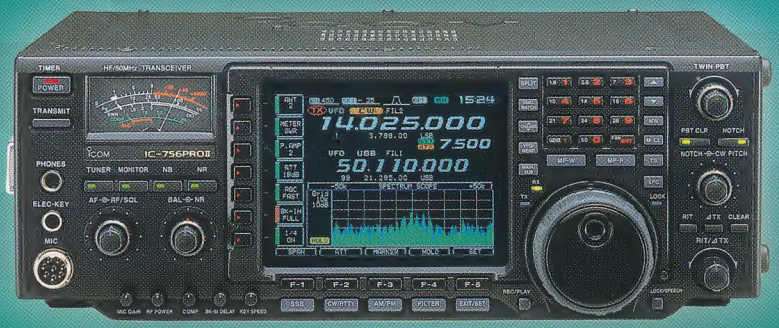

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